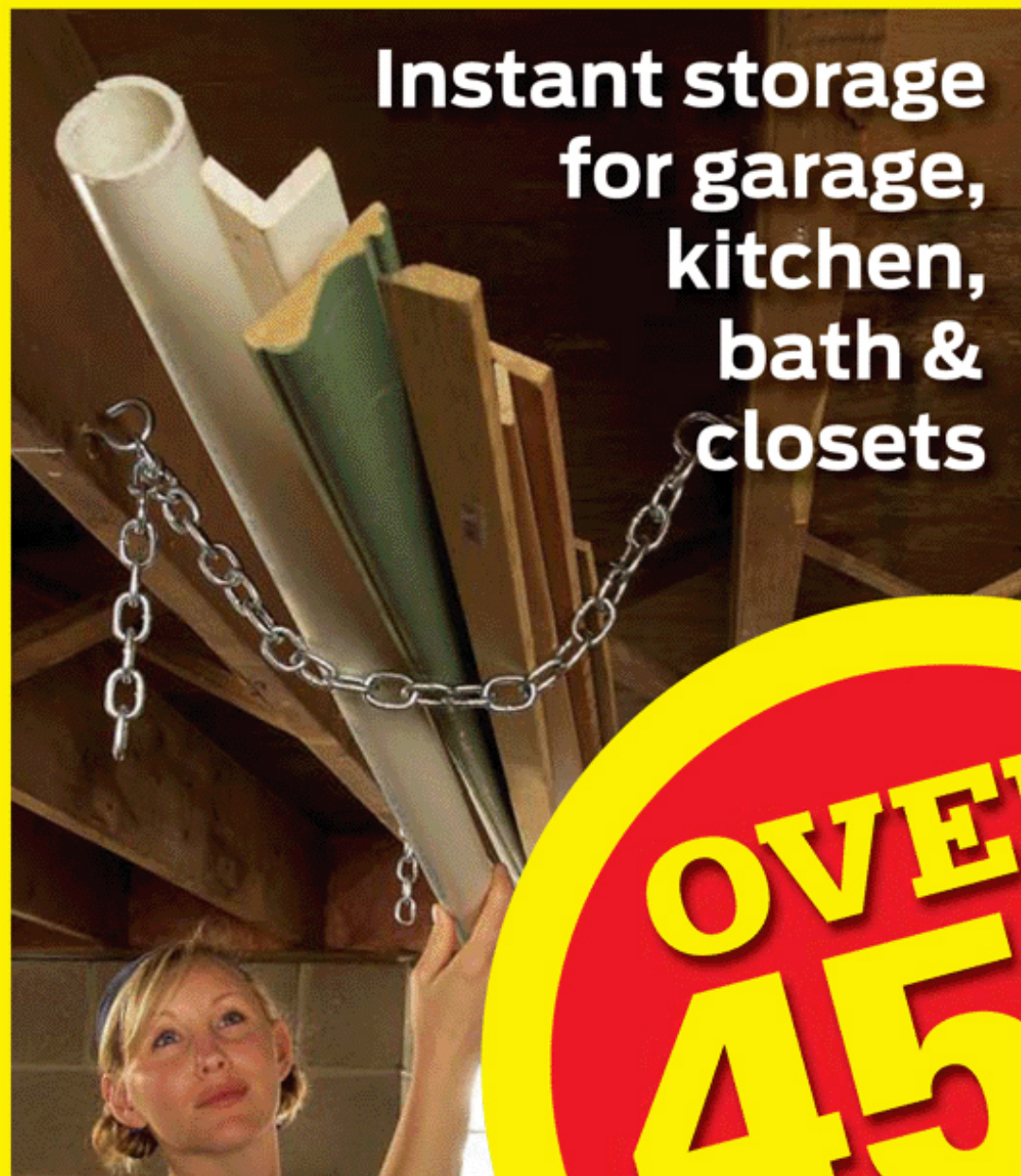


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8 clever ways to use PVC pipe



Panpipe tool storage

While this tool storage device may look like a variation on the Pan flute of Greek mythology, it's actually a great place to store tools that easily get lost—like chisels, files, pencils, scroll saw blades and hobby knives. For the fatter tools, use PVC cement to join short pieces of 1-1/4-in. PVC pipe side to side into a pan-pipe design, then add pieces of 1/2-in. pipe along the front of the flute for skinnier tools. Build a simple case around the pipes to create a floor and a back for hanging on a shop wall.



Foot-friendly spade

Give your shovel-shoving foot a more comfortable pushing surface. Saw a slit in a scrap of 1-in. PVC pipe and slip it over your shovel's flange. If it won't stay put, add a bead of hot-melt glue.

Get a grip

Get a better grip on your straight-handled shovel by epoxying a 1-in. PVC tee to the end.



Handsaw blade saver

Prolong the life of your saw blades with a short section of 1/2-in. PVC pipe. Hold the pipe tight against slightly opened vise jaws, and saw a slit down the entire pipe (this is a tricky cut, but it only has to be done once). Slide the pipe over the blade to keep the teeth sharp.



8 clever ways to use PVC pipe continued on inside back cover

DIY Tips



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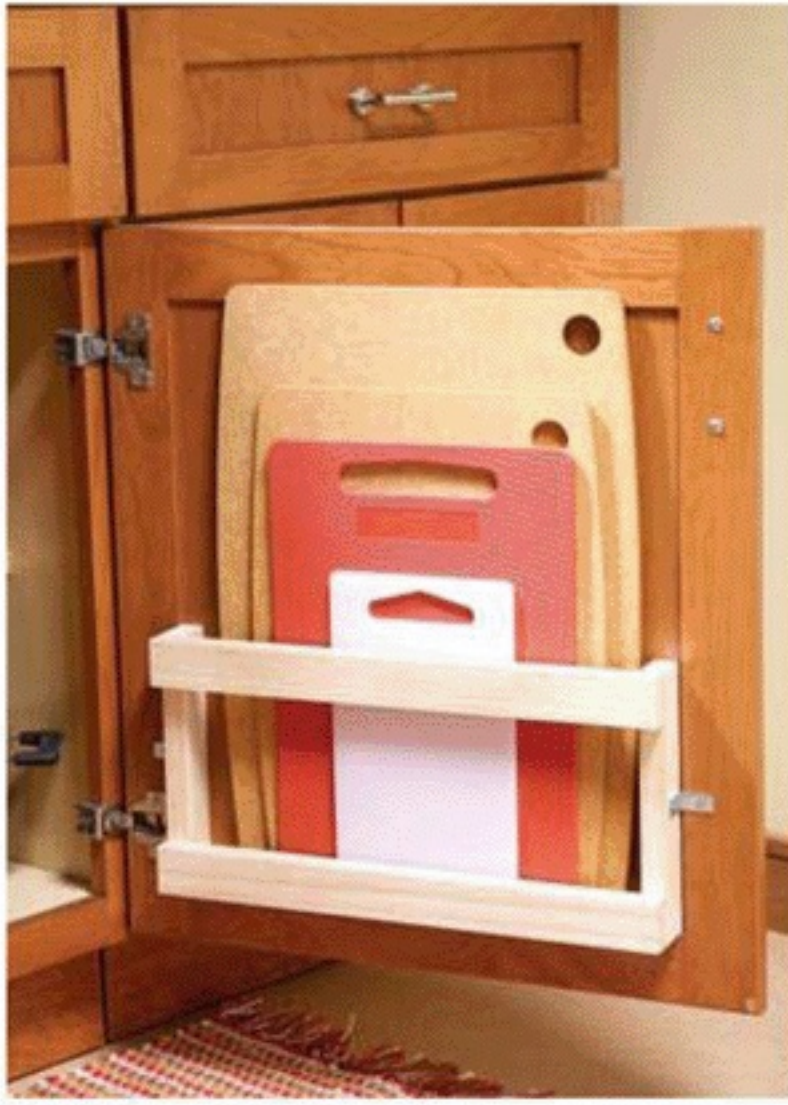
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Tips for speed painting



Clear the room before painting

If something is too big to take out, move it to the center of the room and cover it with plastic. Use canvas drop cloths. Unlike plastic, they stay put without tape and aren't slippery.

Use cotton drop cloths rather than plastic

Spills and spatters happen, regardless of how careful you are. It's a lot easier to prepare for them than to wipe them out of your carpeting or off your wood floor later. All it takes is canvas drop cloths in your work area (a 4-ft. x 15-ft. cloth costs \$15). The thick canvas stays in place, so you don't need to tape it, and you can use it to cover any surface. Plastic drop cloths are slippery to walk on or set a ladder on and don't stay in place. Even worse, paint spills on plastic stay wet, and they can end up on

your shoes and get tracked through the house. Canvas is slippery on hard floors, so rosin paper (\$10 for 400 sq. ft. at home centers) is better over vinyl, tile and hardwood. Tape the sheets together and to the floor to provide a nonslip surface.

But even with canvas or rosin-paper drop cloths, large spills still need to get wiped up right away or they'll seep through. Clean spills with paper towels or cloth rags. Likewise, if you splatter paint on any other surface, wipe it up immediately.

Clean dirty surfaces so the paint can form a strong bond

Paint dirty, oily surfaces and the paint will easily chip or peel off. So before painting, clean grimy areas with a deglosser or heavy-duty cleaner intended for prepaint cleaning. They work well to clean painted, varnished or enameled surfaces to improve the adhesion of the new paint. They're ideal for cleaning greasy or oily areas like kitchen and bathroom walls and removing hand marks around light switches and door-knobs.

Wipe on the cleaner in a circular motion using a lint-free cloth or abrasive pad. Start at the bottom and work up. After the surface is clean, fill in any nicks and holes, then sand them smooth before painting. The cleaners are available at paint stores and home centers. Be sure to wear rubber gloves and eye protection.



TIPS FOR SPEED PAINTING



Spend less time taping

Taping off all your trim with masking tape is time consuming and doesn't guarantee good results—paint can still bleed under the tape. In short, taping off everything is a waste of time. Instead, only tape horizontal surfaces, like baseboards and chair rail, where paint splatter can land and be noticeable. Vertical surfaces, like door and window trim, aren't as vulnerable to splatter, so don't bother taping them. Just be sure to cut in carefully with your paintbrush so you don't slop paint onto the trim.

Mix several cans of paint in a large bucket for a consistent color throughout the room



Paint color may vary slightly from one can to the next. If you have to open a new can in the middle of a wall, the difference may be noticeable. Mixing the paints together eliminates the problem. It's best to estimate the amount of paint you'll need and mix it in a 5-gallon bucket (a process called "boxing"). When coverage is difficult to estimate, add more rather than less. You can always pour the leftover back into cans.

For large jobs, use the bucket and a roller screen rather than a roller tray. It's much faster to load your roller with the screen than to use a roller pan. Simply dunk it into the paint bucket, then roll it along the screen until it stops dripping.



Use extenders to avoid do-overs

The longer that paint stays wet on walls or woodwork, the fewer lap marks and runs you'll have to deal with. Lap marks are those dark, ugly lines caused by painting over an area that's already dry. If you can keep the paint wet longer, you won't have to worry about them. And the way to prolong the "open time" of paint is to add a paint extender or a conditioner (Floetrol is one brand; \$6.50 per qt. at home centers and paint stores).

Pour all the paint you need for the room into a 5-gallon bucket, then stir in the extender or conditioner (following the manufacturer's recommendations). Because extenders and conditioners help level out brush marks and paint runs, you won't have to go back and fix them later.

Clean fast with TSP

You have to start with a clean surface for paint to adhere to previously painted walls and woodwork. Use a sponge and a trisodium phosphate cleaner (or TSP substitute) to quickly wash off dirt, grime and soot. TSP cleans fast and usually doesn't require a lot of scrubbing. Buy TSP concentrate and mix it with water—it's a better value than liquid TSP. A 16-oz. box costs \$5 at home centers.

Use TSP on all of your woodwork. It slightly etches the paint, which helps the new paint form a better bond.



Cut in quickly with a steady hand

Cutting in along trim that's not protected by masking tape takes a steady hand. And once you get the knack for it, you'll never want to fuss with taping trim again. Sure, cutting in can be hard, but you can learn to do it effectively.

Use a tapered paintbrush. The angled bristles uniformly unload the paint as you cut in. Dip the brush into the paint, then tap (don't wipe) each side against your container to knock off the excess. Brush the paint on the wall, about 1/2 in. from the trim. Then make a second pass, cutting in all the way to the trim. Avoid "pushing" the paint with your bristles or you'll leave a ridge where you're cutting in. Apply just enough pressure to let the bristle ends glide next to the trim. To help keep the brush steady, move your entire arm as you paint instead of moving your arm only from the elbow down.

A faster way to paint sashes

Most people slop paint onto the glass when painting windows, then scrape it off with a razor. But if you're good with a paintbrush, you can cut in along the glass. You won't have to scrape, and better yet, you'll leave the paint seal intact between the wood and the glass.

Load your brush and lay off the paint on the sash, staying about 1/2 in. from the glass. As soon as the brush is about half unloaded, go back and cut in closely. Let the brush bristles just barely touch the glass so the paint seals the tiny gap between the wood and the glass. If paint does drip on the window, scrape it off with a razor after it dries.

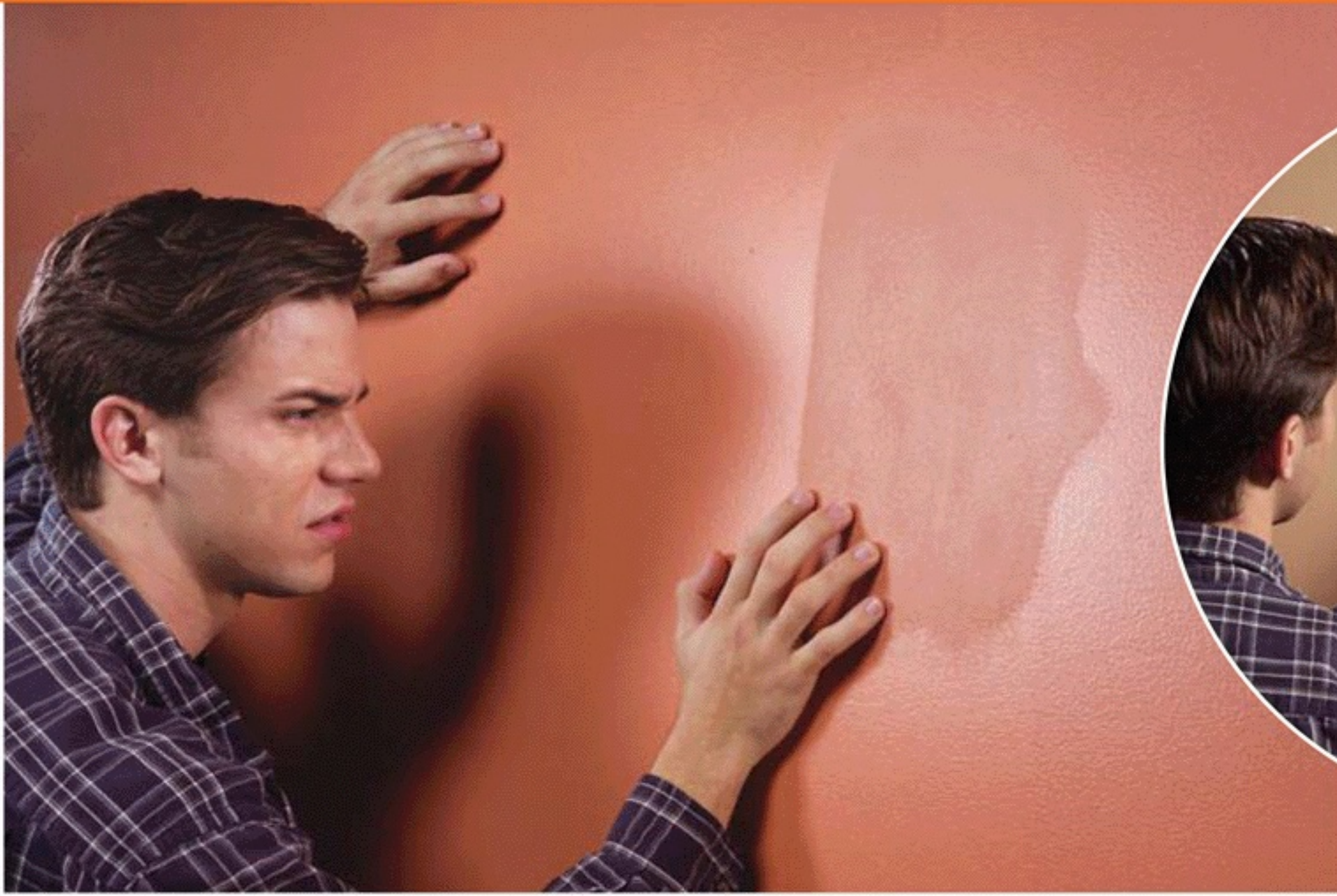


Cut in one wall at a time

Once you have your paintbrush in hand, it's tempting to cut in along all the trim, the ceiling and the corners in the room. But you'll get better results if you cut in just one wall, then immediately roll out the wall before cutting in the next one. That's because if you roll out the wall right away, while the cut-in paint is still wet, the cut-in paint and the wall paint will blend much better, reducing the chance of lap marks.



TIPS FOR SPEED PAINTING

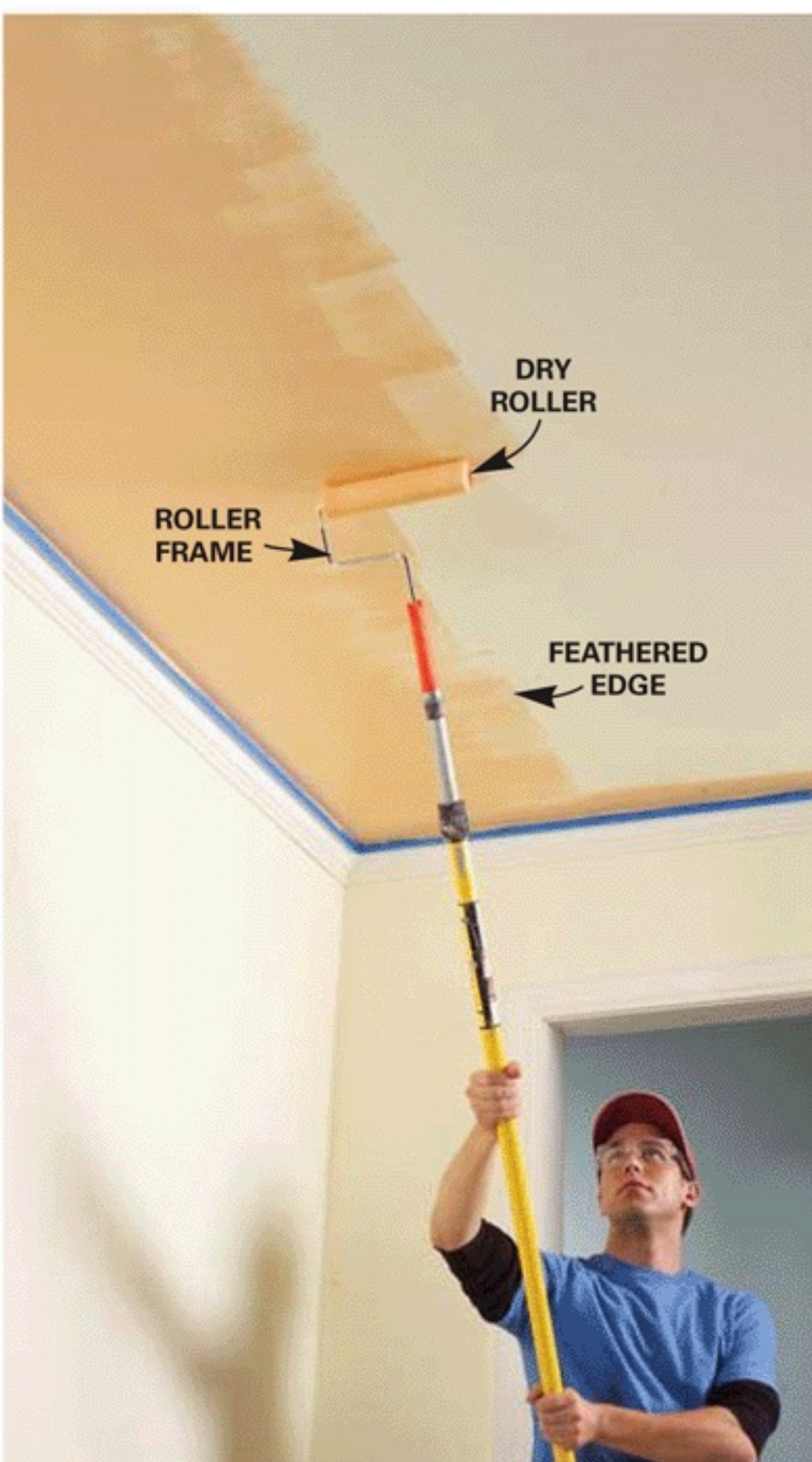


Prime and texture wall patches to avoid a blotchy finish

Freshly painted walls often look blotchy. The color is uniform, but the sheen isn't consistent. This usually occurs over the holes and cracks you patched with a filler or drywall compound. The porous fillers absorb the paint, dulling the surface (a problem called "flashing"). When light hits these dull spots, they stick out like a sore thumb. The smooth patch also stands out in contrast to the slightly bumpy texture of the rest of the

wall. A quick coat of primer is all it takes to eliminate flashing and texture differences.

Primer seals the patch so paint won't sink in and look dull. To match texture, prime with a roller, feathering out the edges. Choose a nap thickness to match the surrounding wall texture (a 3/8-in. nap roller for smooth walls; 1/2-in. for textured).



Cover paint to keep it fresh

Paint dries fast, even paint in your roller tray. If you need to take a break for more than 10 minutes, cover the paint. Place a lid on your 5-gallon bucket of paint and a damp cloth over your handheld paint container. Use aluminum foil to cover your roller tray. If you don't, the film that forms on top of the paint may end up on your walls.

Feather out the paint where you can't keep a wet edge

You can't cover large areas like ceilings, extra-tall walls or stairwells in single, continuous strokes, so the best way to minimize lap marks on these areas is to feather out the paint along the edges that you can't keep wet. The thinner, feathered coat of paint will avoid the buildup that causes the lap mark.

To paint a large section without leaving lap marks, roll the nearly dry roller in different directions along the dry edge, feathering out the paint as you go. After completing the entire length of the wall or ceiling, move to the next section and paint over the feathered edges. For the second coat, apply the paint in the opposite direction. This crisscrossing paint application sharply reduces (if not eliminates) lap marks.



Paint fast along textured ceilings

It's almost impossible to paint right next to rough-textured ceilings (a process called "cutting in") without getting paint on the ceiling. Taping off the ceiling doesn't work either. The solution? Knock off the texture at the edge with a putty knife. Hold the knife at a 45-degree angle to the wall and run the blade along the edge of the ceiling. The blade scrapes away the texture and leaves a small groove in the ceiling. Clean out the groove with a duster or a dry paintbrush.

Now when you cut in along the top of the wall, the paintbrush bristles will slide into the groove, giving you a crisp paint line without getting paint on the ceiling. And you'll never notice the thin line of missing texture.



Roll paint along the edges for perfect texture

Corners and areas next to trim that are painted only with a brush have a noticeably different texture than the surrounding paint. To ensure the finished texture will be consistent in these areas, brush on the paint, then immediately roll it out before the paint dries.

Use a 3-in. roller with a nap that's the same thickness that was used for the rest of the wall. Roll as close as you can without bumping the opposite wall or slopping paint onto the trim. Finish brushing on the paint and rolling it out in one area before moving on to the next section.

Sand trim between coats for an ultra-smooth finish

One coat of paint usually won't hide the underlying color and sheen on trim. And if you don't sand the surface smooth between coats, the finish may have a grainy texture. For a smooth finish, sand the trim before applying each coat of paint.

Sand the trim with a fine-grit sanding sponge. Sponges get into crevices where sandpaper can't go and apply even pressure. Then apply the first coat of paint, let it dry at least 24 hours, lightly sand it again for a completely smooth surface, and apply the second coat. After each sanding, vacuum the trim, then wipe it down with a tack cloth to remove the dust.



TIPS FOR SPEED PAINTING



Fastest way to cover walls

Everyone who's painted has a personal technique for rolling walls. Here is a technique that's methodical, fast and efficient. It also provides even coverage.

If you're right handed, paint the wall from left to right (it'll feel more natural when you're rolling). Load the roller sleeve with paint and roll from the baseboard to the ceiling to get the paint on the wall. Then roll straight back down (without reloading the roller) to ensure the wall is covered. Load the roller and move over about 3 in. to the right (the unpainted side of the

wall) and roll the full height of the wall again to feather out the leading edge.

When you get to the top, move about 6 in. to the left (without reloading) and roll back down to smooth out any runs or lap marks. Then reload the roller, place it on the feathered edge and start the process over. As you paint, roll horizontally where you cut in along the baseboard and ceiling. Only roll about 3 ft. at a time so the paint will stay wet as you roll the walls.

Paint the trim first, then the ceiling and walls

Pros usually follow a certain order when painting a room. They paint the trim first, then the ceiling, then the walls. That's because it's easier (and faster) to mask off the trim than to mask off the walls. And you certainly don't want to mask off both of them!



When painting the trim, you don't have to be neat. Just concentrate on getting a smooth finish on the wood. Don't worry if the trim paint gets slopped onto the walls. You'll cover it later when painting the walls. Once the trim is completely painted and dry (at least 24 hours), mask it off (using an "easy release" painter's tape), then paint the ceiling, then the walls.



No-hassle paint touch-ups

No sooner do you finish painting a wall and cleaning up the rollers and brushes than you find some spots that need touching up. Don't bother getting the tools dirty again. Use an old washcloth or chunk of towel to do the job. Just ball up the washcloth, dip it in the paint can and bounce it over the spot a few times. The washcloth leaves the same kind of texture as a roller sleeve and you can throw it away when you're done. Zero cleanup!

Strain the crud out of paint

Even if you open your paint right after bringing it home from the paint store, you can still have small chunks or strands of hard paint in it. If those end up on the wall, you'll have to pick them out and reroll the area. So spend two minutes straining out the debris.

Buy a paint strainer (\$2) at a home center or paint store or use old pantyhose to strain the paint. Place the strainer over a 5-gallon bucket, then pour the paint through the strainer. The strainer catches any debris in the paint. If you really want to be dollar savvy, rinse out the strainer in the sink and reuse it.



Let the paint dry, then cut the tape loose for a perfect edge

If you're going to tape off your trim, you can't just pull off the tape once the paint is dry. Paint forms a film between the wall and the tape, and removing the tape tears pieces of dried paint off the wall. So before pulling off the tape, cut it loose.

Wait for the paint to completely dry, at least 24 hours, then use a sharp utility knife or box cutter knife to slice through the film. Start in an inconspicuous area to make sure the paint is hard enough to slice cleanly. If you cut the paint while it's still gummy, you'll make a mess. As you cut the paint, pull up the tape at a 45-degree angle.



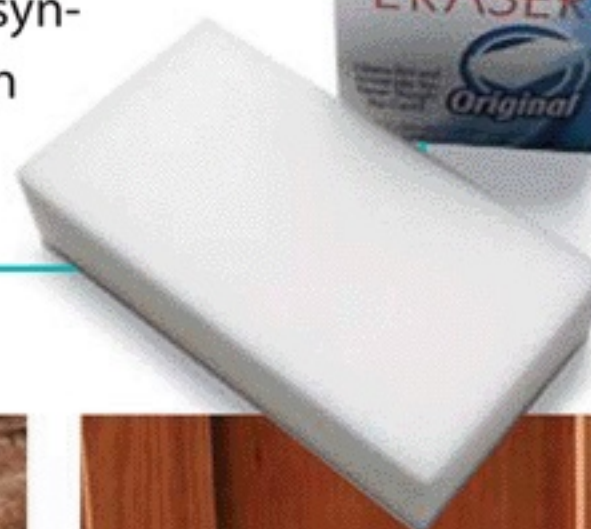
Tips for speed cleaning



Remove bathroom soap scum

Soap has a nasty way of forming a hard-to-remove film on tile in tubs and showers. You won't get rid of it by rubbing. Instead, wait for the surface to dry, then scrape off the scum with a 4-in. plastic putty knife. For grout lines and textured surfaces, use a Mr. Clean Magic Eraser (\$3 for a two-pack).

To prevent soap scum buildup, stop using real soap and start using a synthetic. Chemically speaking, any soap in a liquid or gel form, and some bar soaps (Zest and Ivory), are actually synthetic soaps and much less likely to leave a tough film in your sink, shower or tub.



Use a Swiffer Duster

Lose your old feather duster and pick up a Swiffer Duster with Febreze (\$23), which traps and locks dust in the duster's fibers. It doesn't just move the dust elsewhere like traditional feather dusters—it removes the dust.



Cut grease with a hot rag

Grease and dirt build up on kitchen cabinets over time. To clean your cabinets, heat a slightly damp sponge or cloth in the microwave for 20 to 30 seconds until it's hot. Put on a pair of rubber gloves, spray the cabinets with an all-purpose cleaner containing orange oil (\$4), then wipe off the cleaner with the hot sponge. For stubborn spots, let the cleaner sit for five minutes first. Wipe in the direction of the wood grain. Rinse and reheat the sponge as it becomes saturated. Then wipe the cabinets with a cool, damp cloth. The orange oil leaves a shiny coating. This works for any wood or metal surface.



Remove tough stains from vinyl flooring

Sheet vinyl “resilient” flooring is so easy to clean that it may never require anything beyond damp mopping with a cleaner intended for vinyl floors. But if your floor has marks or stains that still won’t come off, you can use stronger stuff. Although the methods described here won’t harm most vinyl floors, we strongly recommend that you test them in a closet or on a section of flooring that’s hidden by furniture. Use white rags only; chemicals that dissolve stains can also make fabric colors bleed and stain your floor.

Isopropyl alcohol, sold as a disinfectant at drugstores (\$4), is a mild solvent. It’s the best cleaner for heel marks and works on other tough stains too. You can also use lighter fluid or mineral spirits. Remember that all these products are flammable; turn off any nearby pilot lights and hang rags out to dry before throwing them away.

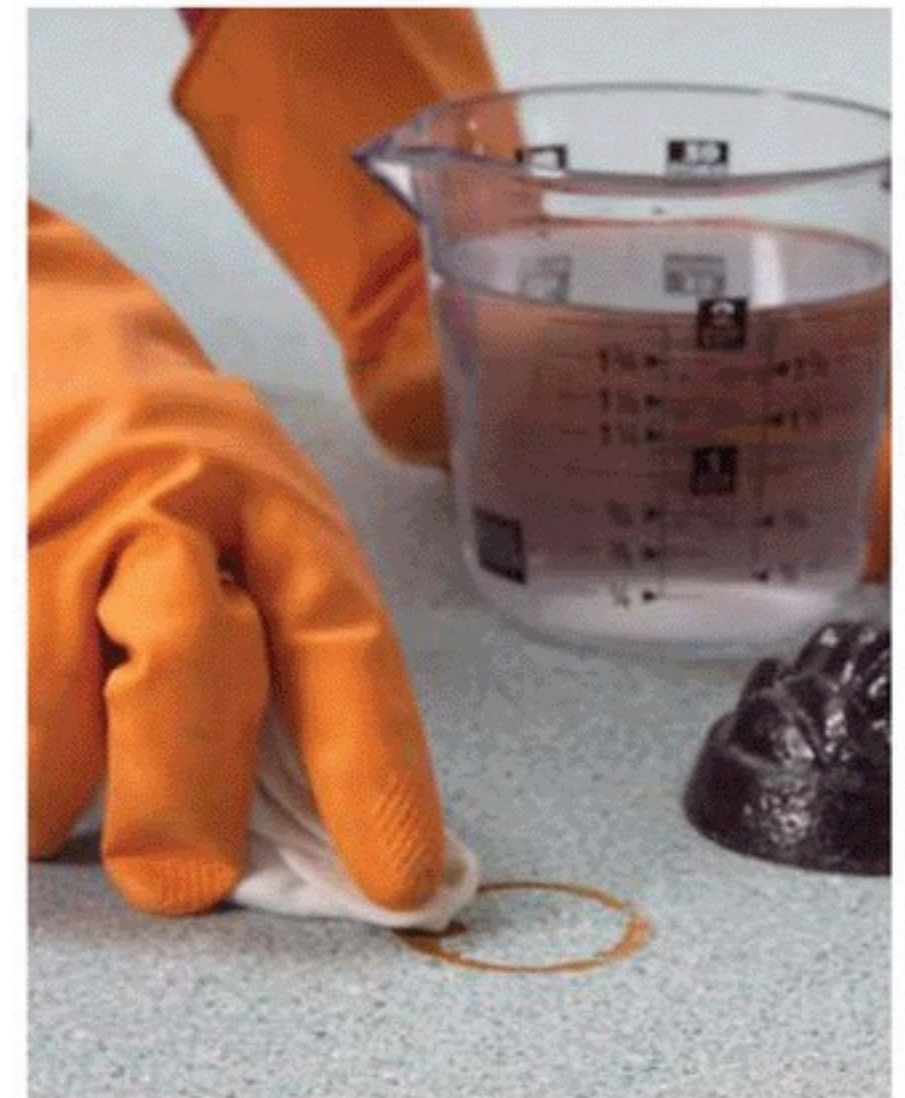
Bleach will often erase stains left by liquids like fruit juices, tomato sauce and wine. Mix one part household bleach with four parts water, soak a rag in it and lay the rag over the stain. Bleach works slowly; you may have to leave the rag in place for an hour or so.

Oxalic acid is the solution for stubborn

rust stains. It’s often labeled “wood bleach”—but not all wood bleach contains oxalic acid, so check the label. Most paint stores and some hardware stores carry oxalic acid (\$7). If the stain won’t rub off, wet a rag with the acid solution and lay it over the stain for 10 minutes. If the stain remains, rewet the rag and repeat. When that’s done, rinse the floor with clean water.



1 Dampen a white rag with isopropyl alcohol and rub away heel marks.



2 Mix oxalic acid powder with water and dab rust stains to remove them. Protect your hands with rubber gloves and open a window for ventilation.

Use a multi-purpose cleaner

Stop using four to six products to clean your bathroom. The pros use one multipurpose cleaner that does it all. Mr. Clean Multi-Surfaces Cleaner with Febreze (\$3 for 28 ozs.) is one brand. With a multipurpose cleaner, bathroom cleaning takes five minutes. mrclean.com



Use Dishwasher Magic

Dishwasher cleaning takes about five seconds with this method. Just put a bottle of Dishwasher Magic (\$5) in the silverware basket and run an empty cycle. dishwashermagic.com



Use a stain remover

Stain removers like Super Iron Out (\$10 for 5 lbs.) make quick work of rust stains in sinks, tubs and toilets. Pour it onto a sponge or add it to the water in the toilet bowl, then scrub with the sponge or a nylon-bristle brush. You can get rid of most stains in less than five minutes. summitbrands.com



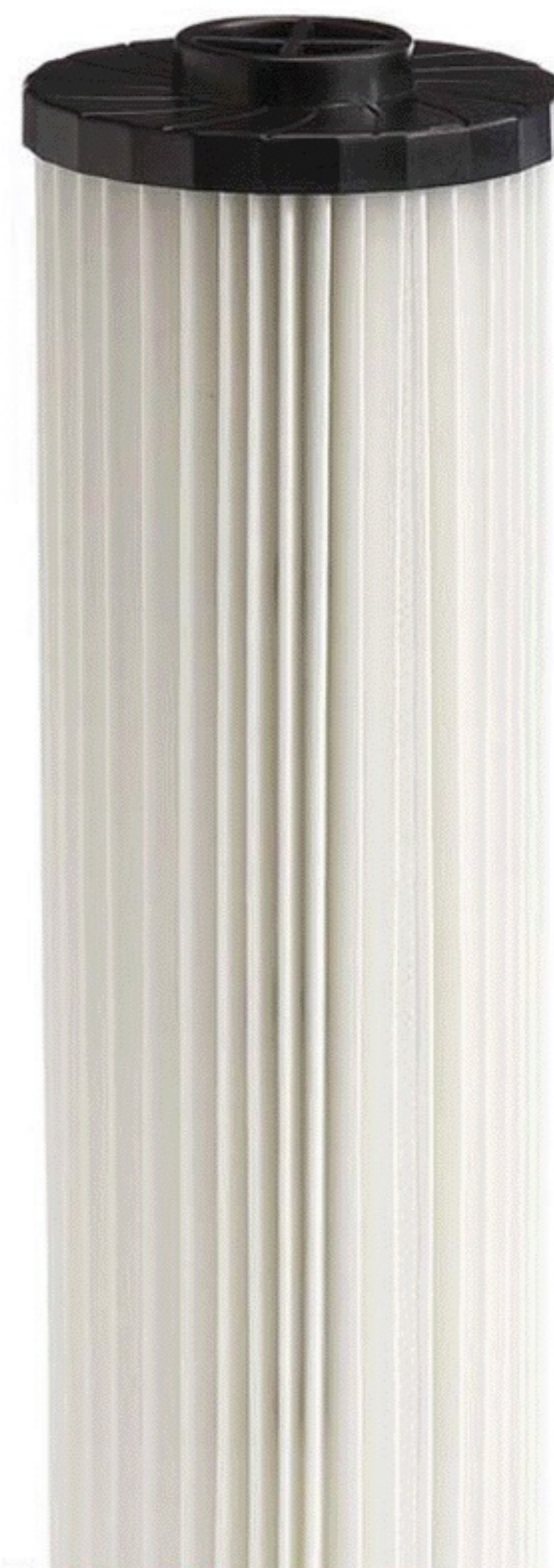


Speed-clean chandeliers

Cleaning a chandelier the old-fashioned way—spraying and wiping each piece by hand—takes forever. And it doesn't help that you're standing on a ladder. Want an easier way? Try a spray-on chandelier cleaner. First spread a plastic tarp on the floor under the chandelier to catch the drips. Then turn off the light and spray the solution on the chandelier until liquid beads start to run (you'll use a lot of spray, but it beats wiping). The spray rinses off the dust. The solution that's left evaporates quickly and doesn't leave water spots. The spray works well on hanging crystals, but don't expect it to remove dust from crevices. Buy it for \$10 from nancysilver.com or chandelierparts.com.

Use a HEPA vacuum filter

Stop blowing dust all over with an old vacuum. A HEPA vacuum filter (starting at \$8) captures microscopic airborne particulates. Old-fashioned paper or conventional vacuum bags pick up only about 30 percent of dust and allergens, and blow the rest back into the air.



Spot-clean food and drink spills

The best way to prevent stains is to treat spills immediately. Stain pens, like Tide to Go and the Clorox Bleach Pen Gel are designed to remove small stains from upholstery, grout, caulk, porcelain and clothing (avoid the bleach pens for colored fabric).

Just press the tip into the stain to release the solution, then rub the tip across the stain to remove it. Inexpensive (\$3) and portable, they're great at removing food and drink spills.

Before applying a cleaning solution to an entire surface or fixture, first test it on a tiny area to make sure it won't damage or discolor the finish.





Scum-proof your shower doors

Start by cleaning any mold, mildew or streaks off your shower doors with a glass cleaner. Use a Mr. Clean Magic Eraser (\$1) to get into the cracks in textured glass. Scrape off tough buildup with a razor blade. Dry the doors with a cloth.

Treat the doors with a product like Aquapel (\$8; autobodydepot.com) or Rain-X (\$5 at auto parts stores and home centers). These glass treatments form an invisible film on the glass to increase water repellency, causing water and soap to bead up and run off the glass. Spray or wipe on the glass treatment, then wipe it off with a microfiber cloth. Overspray won't harm surrounding surfaces. The products repel water for six months.

Use a Swiffer Sweeper Vac

Sweeping the floor with a broom takes too long. The Swiffer Sweeper Vac (\$29) does a better job than a broom and dustpan. Clean up the kids' crumbs and other messes without even bending over. You can clean a floor in four minutes or less!

swiffer.com



Clean dirty, greasy, gummy surfaces

The results of a simple surface cleaning with mineral spirits may amaze you. Polish buildup and the dirt embedded in it can muddy the finish, but will wipe away. Don't use stronger solvents; they might dissolve the finish.

- 1 Soak a coarse, absorbent, clean cloth with mineral spirits and wipe the finish. Keep applying and wiping until the cloth no longer picks up dirt. Then do a final wipe with a fresh, clean rag.

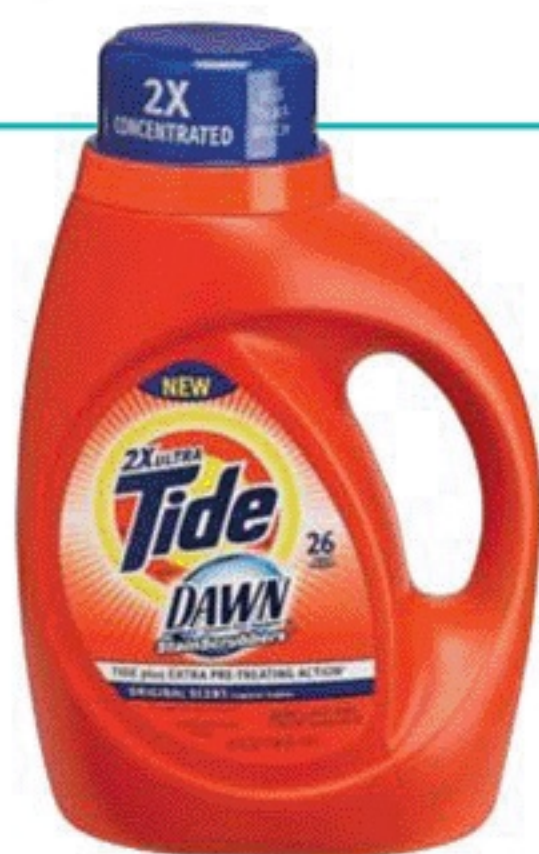


- 2 Clean crevices, grooves and carved areas with cotton swabs dipped in mineral spirits.

TIPS FOR SPEED CLEANING

Clean hard floors faster

Swiffer Sweeper products, particularly the Wet Jet (\$20) let you throw away the traditional mop and bucket and clean your hard floors in less time and in a more sanitary way (mops are often full of bacteria, which get spread on the floor during cleaning). Three cleaning solutions (for different floor types) are available for the battery-powered Wet Jet. The solution is automatically sprayed onto the floor with the push of a button. Disposable, textured pads absorb the spray as they clean. Since the Wet Jet is very portable, it's great for spot-cleaning spills. The downside is that it doesn't work as well as a mop on extremely dirty floors or on mud that gets tracked into the house.



Use Tide with Dawn StainScrubbers

Don't worry about tough stains like makeup or chocolate ruining your clothes. Try Tide with Dawn StainScrubbers (\$6.50 for 50 ozs.), a detergent that can handle stains in the wash cycle, saving you valuable time.

tide.com

Use a Magic Eraser

A Mr. Clean Magic Eraser easily rubs scuff and grease marks off the wall. mrclean.com



Switch to microfiber cloths

Throw out the old cotton rags and the paper towels and use microfiber cloths instead. These cloths are composed of ultrafine synthetic fibers that are woven together to create a "microfiber." The fibers rub together during cleaning, creating a static charge that attracts dirt and dust, so you can tackle dusting chores without using sprays or chemicals (although you can still use them if you want). The tiny fibers have sharp edges that scour well, but they aren't abrasive, so they won't scratch surfaces.

Use the cloths for cleaning appliances, sinks, and TV and computer monitors, and for drying dishes, washing windows and any other chore that requires a cloth (wet or dry). Microfiber cloths (\$20 for a 10-pack at discount stores) leave a streak- and lint-free finish, are very absorbent, and can be washed and reused.



Blow out the garage

Forget the broom—clean out the garage with a leaf blower. It's fast (about five minutes), you don't have to move heavy stuff, and you can clean work surfaces and shelves along with the floor. First put away papers or anything else that you don't want blown away. Open the overhead door. Put on a dust mask, earplugs and safety glasses, then turn on the leaf blower and blow out the dust and debris. Use the leaf blower to get under workbenches and to clean off the benches themselves.



Use a disposer cleaner

Forget lemons—clean and deodorize your garbage disposer with a disposer cleaner in about 15 seconds. Disposer Care (\$4) is one brand. Turn on the hot water, pour a packet of Disposer Care into the disposer and turn it on. Do it once a week.
disposercare.com



Remove pet hair with duct tape

That's right. There's another use for duct tape—cleaning. The stickiness of duct tape makes it perfect for a makeshift pet hair remover. Wrap duct tape around a paint roller cover, sticky side out. Roll the tape over furniture or carpet to pick up the pet hair. It also works on seats in vehicles. A sponge or cloth wrapped with duct tape works great for getting into corners. Add more tape as the surface gets full of hair. This method is faster than vacuuming.

Use a doormat

Eighty-five percent of the dirt that comes into the home is from shoes! So nag your family members to take them off. Place shoes on doormats to contain the dirt. A 20 x 30-in. mat costs about \$20 at discount stores.



Tips for getting rid of insect pests

Get rid of ants!

Wait! Don't step on that ant! Stomping on every ant you see won't solve your ant problem. In fact, the ants scurrying across your kitchen floor might be the key to wiping out the entire colony—ridding your house of these six-legged pests once and for all.

The following pages show you how to kill ants in and around your house. In most cases, you can put an end to your ant problem for less than \$25 with products from a home center or hardware store. Here you'll learn what products to use and where to use them to wipe out the ants.

I.D.the ant

Start by identifying the type of ant in your house so you can find out its nesting habits and have a better idea of where they're living (they may be nesting outdoors). Take a close-up photo of the ant and e-mail it (or snail mail it) to your local university extension service (enter your state's name and "university extension service" into any online search engine). The extension service will tell you the type of ant you're dealing with and where it nests. It may give you fact sheets about the ant species and maybe even some advice on getting rid of that particular ant species.

Keep it clean

A clean house is your first defense against ants. Sweep up food crumbs, wipe up spills, take out the garbage and don't leave dirty dishes sitting around the house. This takes away the ants' food source. Spray vinegar mixed with water around bowls of pet food to keep ants from feasting there.



Erase their trails

Where you see one ant, you're bound to see others. That's because ants leave a scented trail that other ants follow. Sweeping or mopping isn't enough to eliminate the scent. Instead, mix 1 part vinegar with 3 parts water in a spray bottle, then spray wherever you've seen ants in the past (Photo 1).

This will stop outdoor nesting ants that entered the house to forage for food (ants that come inside are not necessarily trying to establish a nest). But vinegar and water won't stop ants that are already nesting indoors. You'll need to kill them with ant bait (see the next step).

Wipe out colonies

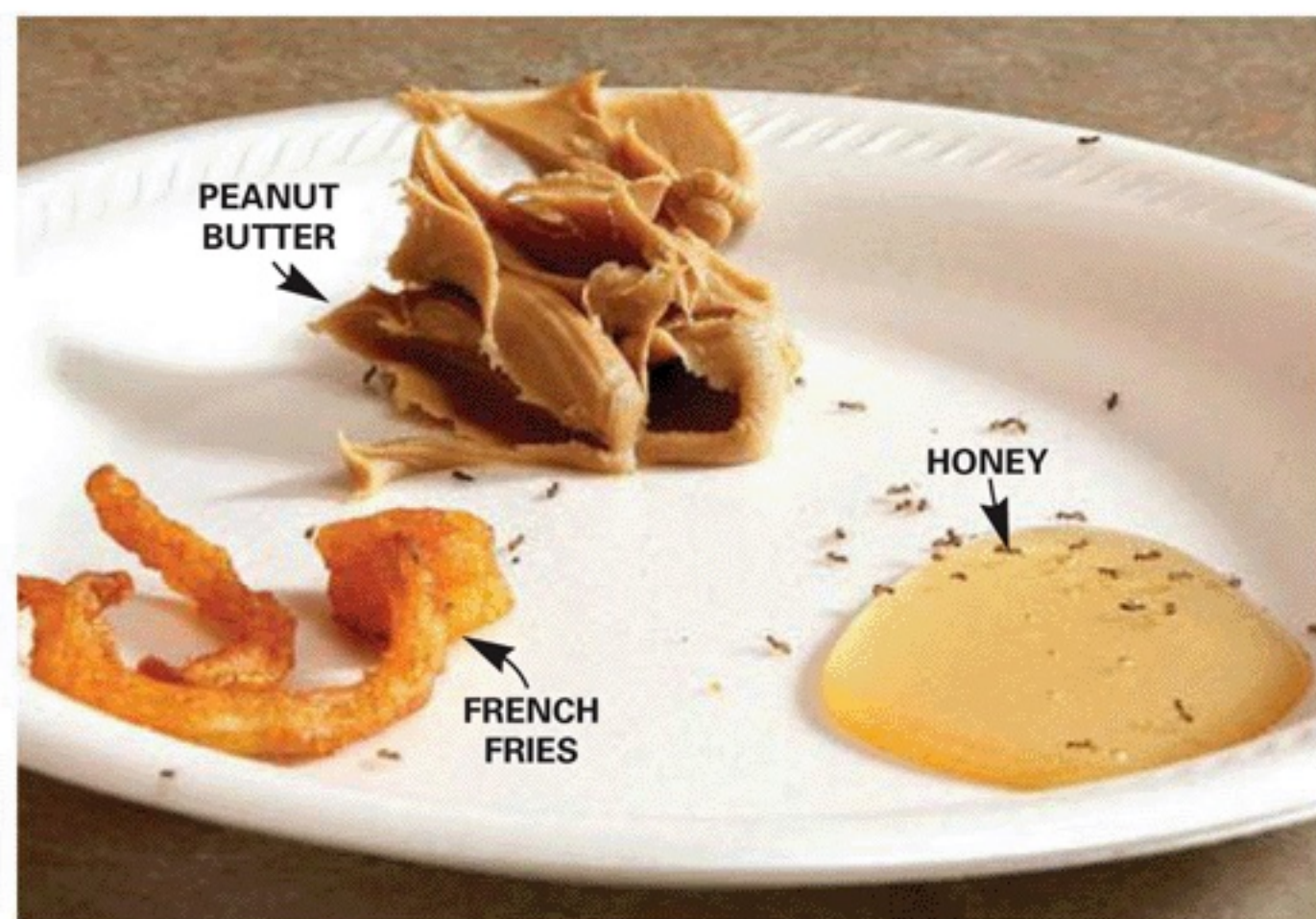
When you see an ant, your first impulse is probably to step on it. But don't. You'll kill it, but for every ant you see, there may be hundreds more hiding in the house. The ones you see are scout ants, looking for food to take back to the colony. Use these scouts to wipe out the entire colony.

Prebait ants in areas you've previously seen them (Photo 2). Ants' tastes change during the year. They usually prefer protein in the spring and sweets or fatty/oily foods in the summer. Once you know what the ants like, buy and set out ant bait that's geared to their taste (Photo 3). Look on the bait package for words like "controls both sweet and grease eating ants."

Expect to see more ants (initially) when you set out the bait. That's a good thing. It means more ants are taking the bait (which is toxic) back to the colony where they'll share it with the rest of the ants, including the queen, and kill them. There might be thousands of ants back at the nest.



1 Disrupt the ant trail so more ants won't follow it inside. Mix vinegar and water, then spray it where you've seen ants to cover the ant scent.



2 Test the ants to find out what type of foods they like. Set out sugar or honey, fried food and peanut butter, then see which food attracts ants. Use whichever food they prefer for bait.





3 Place liquid ant bait stations in areas where you've seen ants, like under the sink and along walls, to make it as easy as possible for the ants to take the toxic bait back to the nest.



Jeff Hahn, University of Minnesota

4 Look for water-damaged areas in the house and places where water has recently leaked to find the ant nest. Spray the nest with an indoor insecticide.



5 Spray an indoor insect killer in places where ants can enter, including windows and doors, holes in exterior walls and cracks in the foundation.



6 Spray outdoor insecticide on the foundation walls, and on and under the first course of lap siding to keep ants from entering the house.



Mike Merchant, Texas A&M

7 Look for ant nests or tunnels in the foundation or siding. Spray the area with an insecticide to kill the ants.

Liquid bait works best for many sweet-loving ants. Other ants prefer solid baits. Terro is one brand of liquid bait (\$8 for a six-pack). If you still have ants after two weeks, replace the bait containers. If that doesn't work, it's time to hunt down the nest.

Hunt down the nest

Sometimes the solution to an ant problem is getting rid of their nest. If you're dealing with carpenter ants, which can do structural damage to your house, it's vital that you wipe them out ASAP. Finding the nest may not be easy and takes some detective work.

Ants generally prefer damp areas, such as framing or flooring that's soft and spongy from a plumbing or roof leak. Start by looking for areas with water damage (Photo 4). Attics, bathrooms and exterior walls are obvious candidates.

Cut small holes in water-damaged walls to track down the ant nest. (You're going to have to repair the walls anyway.) When you find the nest, spray it with an insecticide that contains bifenthrin, permethrin or deltamethrin (look on the label). Ortho's Home Defense Max is one brand (\$5 for 24 ozs.). Be sure to fix the water leak and replace damaged wood.

If you can't track down the nest, hire a pest control service. Pros spend about 80 percent of their time hunting down nests. Their fees start at about \$150, but tough cases with multiple treatments can cost \$400 or more. Find pros by looking under "Pest Control Services" in the phone book or online.

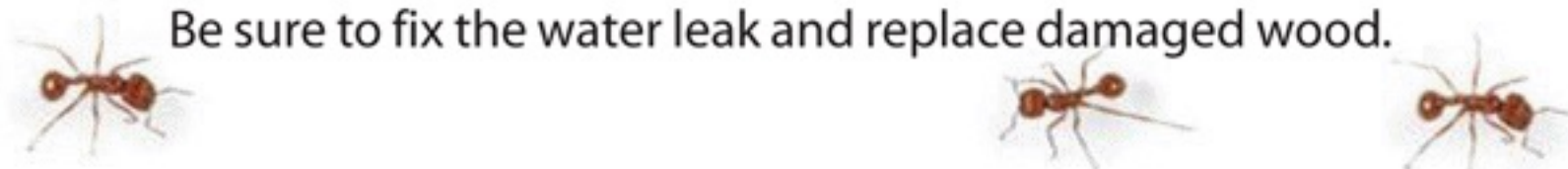
Spray entry points

After ridding the house of ants, take steps to ensure they don't come back. Caulk and seal holes, and then spray insecticide around doors and windows (Photo 5). Use an insecticide that contains bifenthrin, permethrin or deltamethrin. Spray a 4-in.-wide band along entry points, just enough to wet the surface. Once dry, the spray leaves an invisible film that repels ants so they won't enter the house.

Each spring, spray the insecticide to guard against ants. But keep in mind that this only works to keep ants out—it won't kill ants that are already inside, and it can actually interfere with the use of ant baits.

Spray on a barrier

If you're still getting ants in your house after spraying interior



TIPS FOR GETTING RID OF INSECT PESTS



8 Spray a lawn and garden insect killer on the grass within one day of mowing. Also spray on trees and shrubs. Spray on a calm day to prevent drift.



9 Apply fire ant bait using a broadcast spreader. Fill the spreader over the driveway or a tarp to catch the granules that fall through the spreader.



10 Trim back trees, shrubs and plants so they're at least 6 in. from the house, roof and deck. This eliminates bridges for ants to reach your home.



entry points, spray a 12-in.-wide band of insecticide on the foundation and siding (Photo 6). Use an outdoor insecticide that says "barrier treatment" on the label. Bayer Advanced Home Pest Control is one brand (\$9 for 1 gallon).

Destroy exterior nests

If you frequently see ants in the same area on the siding, there's probably a nest in there (Photo 7). Look for holes in the siding where ants are crawling in and out. The holes are often located between bricks where mortar has fallen out, under lap siding or in cracks in stucco. Once you locate the nest, or the vicinity of the nest, spray the area with an insecticide containing bifenthrin.

Kill ants in your yard

Anthills are eyesores in yards, and the ants can ruin outside dining. If you only have ants in a certain area, like along your sidewalk, spot-treat the area with an outdoor insecticide. Liquid or granules work fine. For large-scale ant problems, use a lawn and garden insect killer that contains bifenthrin as the active ingredient. Ortho's Bug-B-Gon Max is one brand (\$11 for a 32-oz. concentrate that covers up to 16,000 sq. ft.). The spray will also kill other insects (read the label for a list). First mow the grass, then spray the insecticide on the entire lawn (Photo 8). Spray in the early morning or late afternoon when the ants are most active. If ants are still building mounds after six weeks, treat the lawn again (the insecticide works for up to six weeks). You won't kill every ant in your yard (nor would you want to!), but spraying will eliminate most of them and stop the annoying mounds.

Kill fire ants with bait

Fire ants are found in the Southeastern United States and Southern California. Standard insecticides are much less effective at killing fire ants. You need a special product that's designed to wipe out these biting critters, like Amdro's Fire-Strike Ant Bait (\$24 for a 5-lb. bag that treats 10,000 sq. ft.). Apply the granules with a broadcast spreader (Photo 9). Fire ants carry the granules, which they think are food (it's actually toxic bait) back to their mounds. The ants share the bait and die. A longer-lasting alternative is Garden Tech's Over 'N Out! (\$23 for a 10-lb. bag that treats 5,000 sq. ft.) This granular insecticide keeps killing fire ants for up to a year. As with other baits, it may take a few weeks for you to see full results.

Eliminate safe havens

Once you kill the ants in your house and yard, take steps to ensure they don't come back. Trim back bushes, shrubs and trees that brush against your siding or roof and provide a bridge for ants to reach your house (Photo 10). Keep a 3-in. to 6-in. clearance space between the soil around the foundation and the bottom row of siding to prevent ants from nesting in the siding (and make sure the soil slopes away from the house). Avoid stacking firewood next to the house. Firewood makes a perfect retreat for ants.

Ants like bare spots in the yard and they like to build nests under layers of thatch. Maintaining a healthy lawn is one way to discourage ants. If anthills pop up in bare areas, spray the mound with insecticide and plant grass in the bare spots.



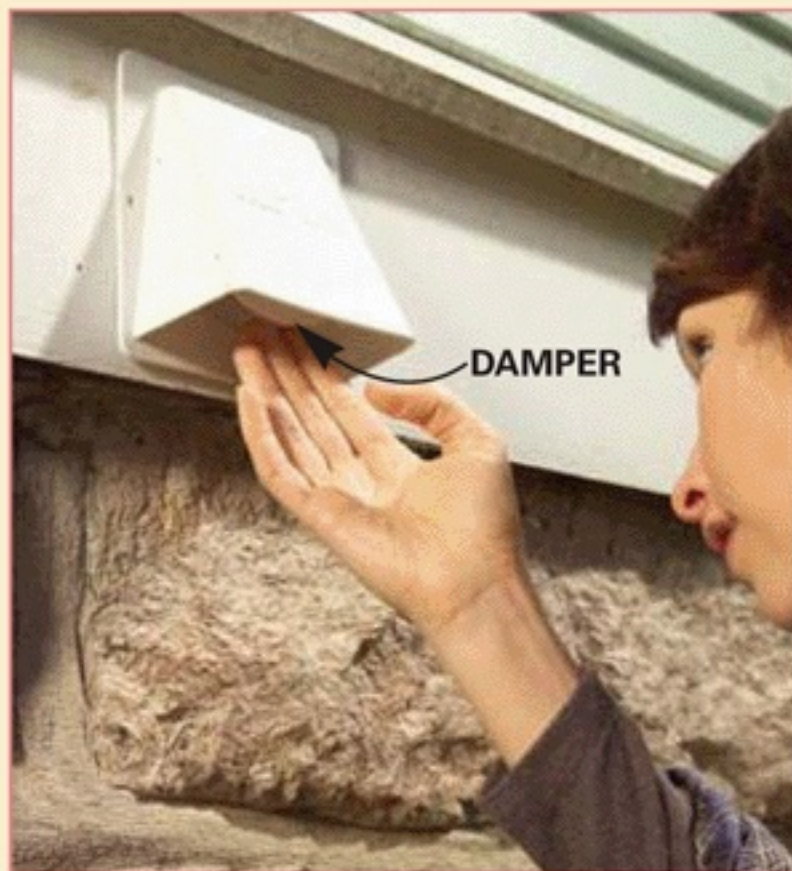
Eliminate pest entrances



1 Inspect the underside of your siding using a mirror. If you find a gap, mark the location with masking tape so you can seal it later.



2 Seal doors, windows and basement sashes with adhesive-backed weatherstripping. Clean the surface first so the weatherstrip will adhere well.



3 Examine dryer vents to ensure the damper isn't stuck open or broken off completely. Also check that the seal between the vent and the wall is tight.



4 Fill gaps between trim and siding with acrylic latex caulk. Keep a wet cloth handy to clean up any stray caulk. Smooth the bead with a wet finger.



5 Pull nests from the soffit gaps and then fill these openings with expanding foam. After the foam hardens, cut off the excess with a utility knife.



6 Stuff in a generous amount of copper mesh with a screwdriver, leaving about half an inch of space for expanding foam sealant. Seal gaps with foam.



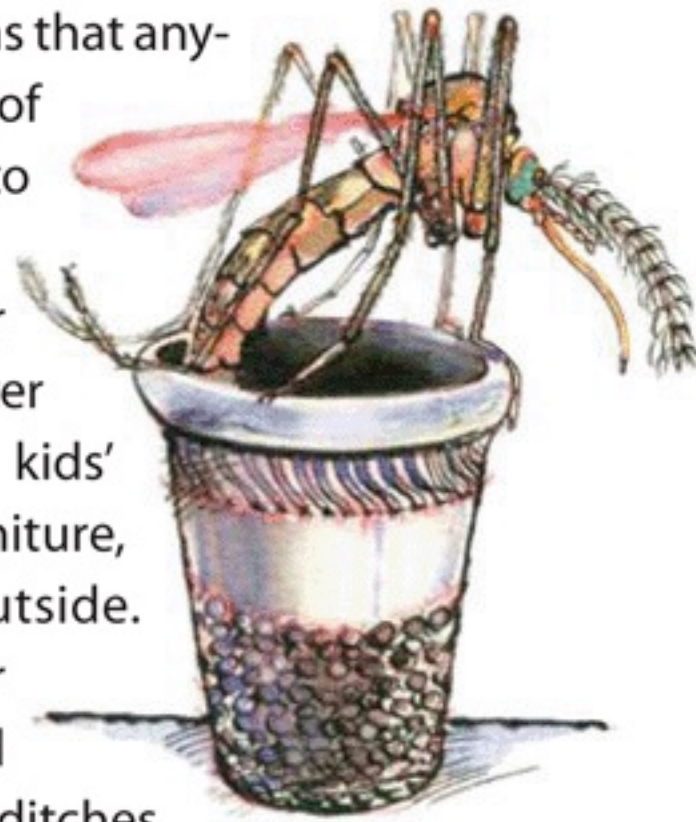
7 Trim the foam flush using a utility knife after allowing the foam to harden overnight. To trim off a thicker section of foam, use an old steak knife.

7 ways to keep mosquitoes away

1 Eliminate standing water

It's no surprise that mosquitoes are attracted to water, but it is surprising how little water it takes for mosquitoes to breed and multiply. Mosquitoes can lay eggs in just a thimbleful of water, which means that anything that holds even a tiny bit of water can be home to mosquito larvae.

Find and empty these water sources. Dispose of or drain water from old tires, buckets, unused kids' pools, bases of flowerpots, furniture, toys, boats and trailers left outside. Keep the gutters clean so water can't accumulate. Fill tree and stump holes with mortar. Slope ditches so they drain, and fill swampy areas with soil.



2 Prune hedges, mow the yard to reduce shade

Hedges, bushes and tall grass provide shade that shelters mosquitoes. They need a place to get out of the heat and sun during the day, so the fewer shaded areas they find, the less they'll congregate in your yard.

Keep the hedges and bushes trimmed, and mow the yard at least once a week. Mow or till weedy spots to minimize shade and to keep these areas from becoming overgrown jungles.



Illustrations: Michael McParlane

3 Stock water gardens with fish and chlorinate swimming pool water

When water is part of your landscaping or used for recreation, you don't want to drain it. Buy a few goldfish or minnows from a pet store or bait store and add them to your water garden. They may only live for one season, but they'll eat mosquito larvae.

Chlorinate water that remains standing for a long period, like water in swimming pools, saunas and hot tubs. Follow the manufacturer's recommendations for the safe use of chlorine. Keep pools covered when not in use. For small fountains, birdbaths and wading pools that you don't want to chlorinate, simply change the water once a week to dispose of mosquito larvae. Sweep surfaces with a brush to knock off eggs before refilling the container.

4 Have the foliage professionally sprayed

If Mosquito Control (see number 6) won't spray your property, hire an exterminator to spray the foliage. This wipes out mosquitoes and other insects for at least a few days. If you're planning a party, have this done one to three days before your event. Expect to pay \$135 for a yard of less than half an acre and \$225 for a yard up to an acre. For a (nearly) mosquito-free summer, have the foliage sprayed monthly (about \$350 for the summer for a small yard).

Although you can buy sprays yourself, it's best to leave the application of insecticides to the pros. They can buy more effective treatments that are restricted to licensed exterminators. They also know which to use and how much to apply to kill the mosquitoes without posing a hazard to other critters. When used according to the label, the insecticides pose minimal risk to humans and pets.



5 Treat small pools of water

Sometimes it's nearly impossible to get rid of standing water. And sometimes, like when you have a small pond, you don't want to.

Pour a tiny amount of Agnique MMF mosquito larvicide in the water so that a thin layer covers the surface. It'll suffocate the larvae (and any other insects in the water) without harming fish. (Buy it online at myadapco.com. A liter costs \$13.) Or put Mosquito Dunk into the water. These doughnut-shaped briquettes produce a toxic bacterial spore that kills mosquito larvae, but won't harm fish or animals. One briquette lasts for 30 days. Large bodies of water may require more briquettes. The Mosquito Dunk doesn't repel mosquitoes; it prevents breeding. Find it at home centers for \$9 per six-pack.

6 Contact your local Mosquito Control District for heavy infestations

Large wooded areas, ponds and lakes are havens for mosquitoes. It's almost impossible to treat these areas yourself, so call in the big guns—your local Mosquito Control District. Local policies vary and services are localized, but often, when the number of mosquitoes reaches a certain level, Mosquito Control will spray for them. This is also a good idea if mosquitoes are swarming your yard in unusually high numbers.

It'll take time (about two weeks) for Mosquito Control to come out, conduct the test, and if needed, spray. Keep in mind

that specific criteria must be met before Mosquito Control will spray private property.

Your mosquito problem may not meet the threshold, but it's worth a call.



7 Run fans at ground level

Mosquitoes are particularly attracted to body odors and the carbon dioxide exhaled through breathing. They allow mosquitoes to home in—and that's when the biting starts. Dissipating these telltale human signs makes victims harder to find. Set fans on the ground and turn them on to break up the scent patterns when you're outside. This simple solution is surprisingly effective for spur-of-the-moment events, when you can't use the measures listed above.

Because of their light weight, mosquitoes are weak flyers. The breeze from the fans makes it difficult for them to fly.



10-minute plumbing fixes



Unclog a tub drain in five minutes—*without* chemicals

About 80 percent of the time, you can fix slow-draining or clogged tub drains in five minutes, without chemicals and without a \$100 plumber bill. In most cases, you'll only need a screwdriver and a stiff wire or a bent coat hanger. The problem is usually just a sticky wad of hair that collects on the crossbars, a few inches under the stopper. All you need to do is figure out how to remove the stopper (that's almost always easy) and fish out the gunk. Bend a little hook on the end of the stiff wire with needle-nose pliers and shove it through the clog—you'll nearly always extract the entire ugly mess. If hair is wrapped around the crossbars, slice through it with a utility knife and then grab it with the wire.

Follow this series of photos to determine which type of stopper you have and how to remove it. The most common type, a drop stopper (shown at right), has a setscrew located under the cap.

Drop stoppers



Lift the stopper and loosen the screw on the shaft slightly. Slide the stopper off the shaft.

Push/lock drain stoppers

These stoppers lock and seal when you press them down and release when you push down a second time. The way to remove them isn't so obvious. In most cases you have to hold the stem while unscrewing the cap as shown. With the cap off, you can sometimes fish out the hair from the crossbars. Otherwise simply remove the entire shaft by unscrewing it. You may have to adjust the screw tension on the stem when you reinstall everything to get a good seal.

Hold the stopper shaft tightly with a finger and unscrew the top.



Levered stoppers

Many tubs, certainly most older ones, have a stopper located inside the drain and overflow tube. Most of these have a lever on the overflow plate and a screen over the drain. The screen keeps most hair out of the drain, but some gets through and eventually forms a clog at the crossbars. Simply unscrew the screen for easy access to this clog and remove the clog. If the drain has an internal stopper, unscrew the overflow plate and pull the linkage and stopper up and out. Then clean the linkage and stopper and run water down the drain to flush it out.

Occasionally the linkage is out of adjustment and the stopper doesn't open far enough from its seat to allow a good flow. Adjust it, reinsert it and test it. Run water into the tub. If it leaks out, lengthen the stopper linkage to seal the drain better. If the drain doesn't open to let the water out, shorten the stopper linkage.

First remove the screen and clean the crossbars. Then unscrew the overflow plate, pull out the linkage, clean the stopper and linkage, and rinse the drainpipes. Readjust the linkage if necessary. Reinstall the assembly.

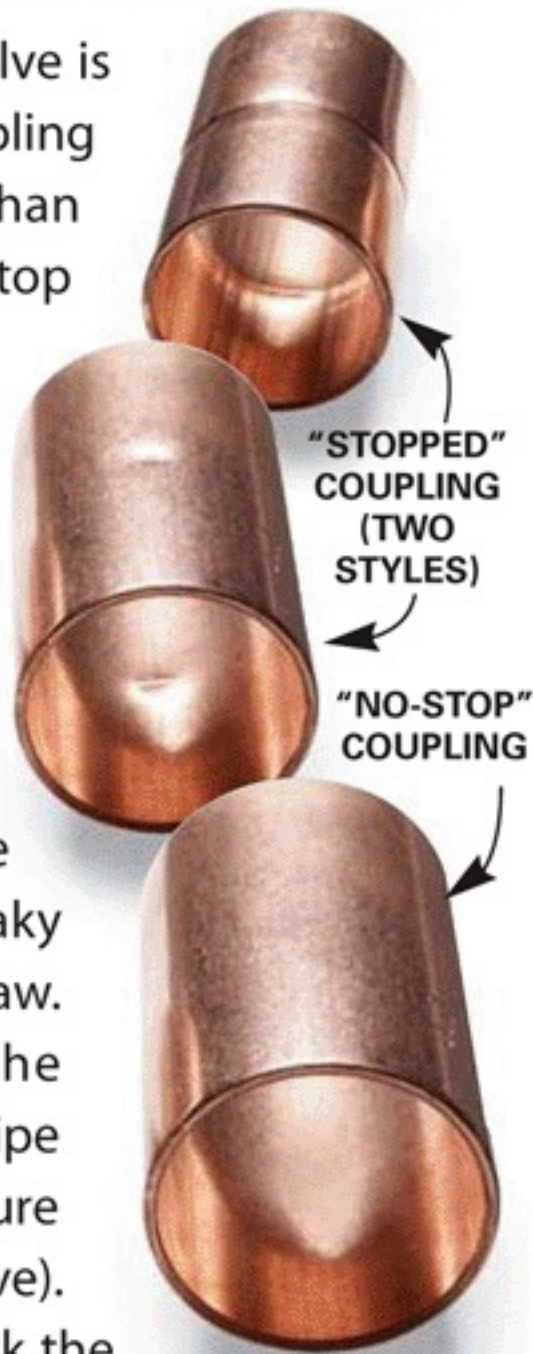


10-MINUTE PLUMBING FIXES

Replace a water pipe section

The key to replacing a leaky water valve is to use a special “slip” or “no-stop” coupling (available at home centers for less than \$3). Unlike traditional couplings, no-stop couplings don’t have a flange or dimple that stops the plumbing pipe once it’s inserted halfway into the coupling. This lets you install the coupling and move it back out of the way, then have room to insert the new section of pipe.

Turn off the water, then cut the pipe about 6 in. from each side of the leaky valve, using a pipe cutter or a hacksaw. Place the no-stop coupling over the existing pipe. Cut a new section of pipe to replace the piece you cut out (be sure to factor in the length of the water valve). Solder the pipe to the valve, then stick the assembled section between the two existing pipes. Move the no-stop coupling over the new pipe, then solder all the joints.



Slide the no-stop coupling over the pipe, then install the new valve and pipe assembly.



Move the no-stop coupling over the pipe assembly, then solder it to the assembly and the existing pipe.

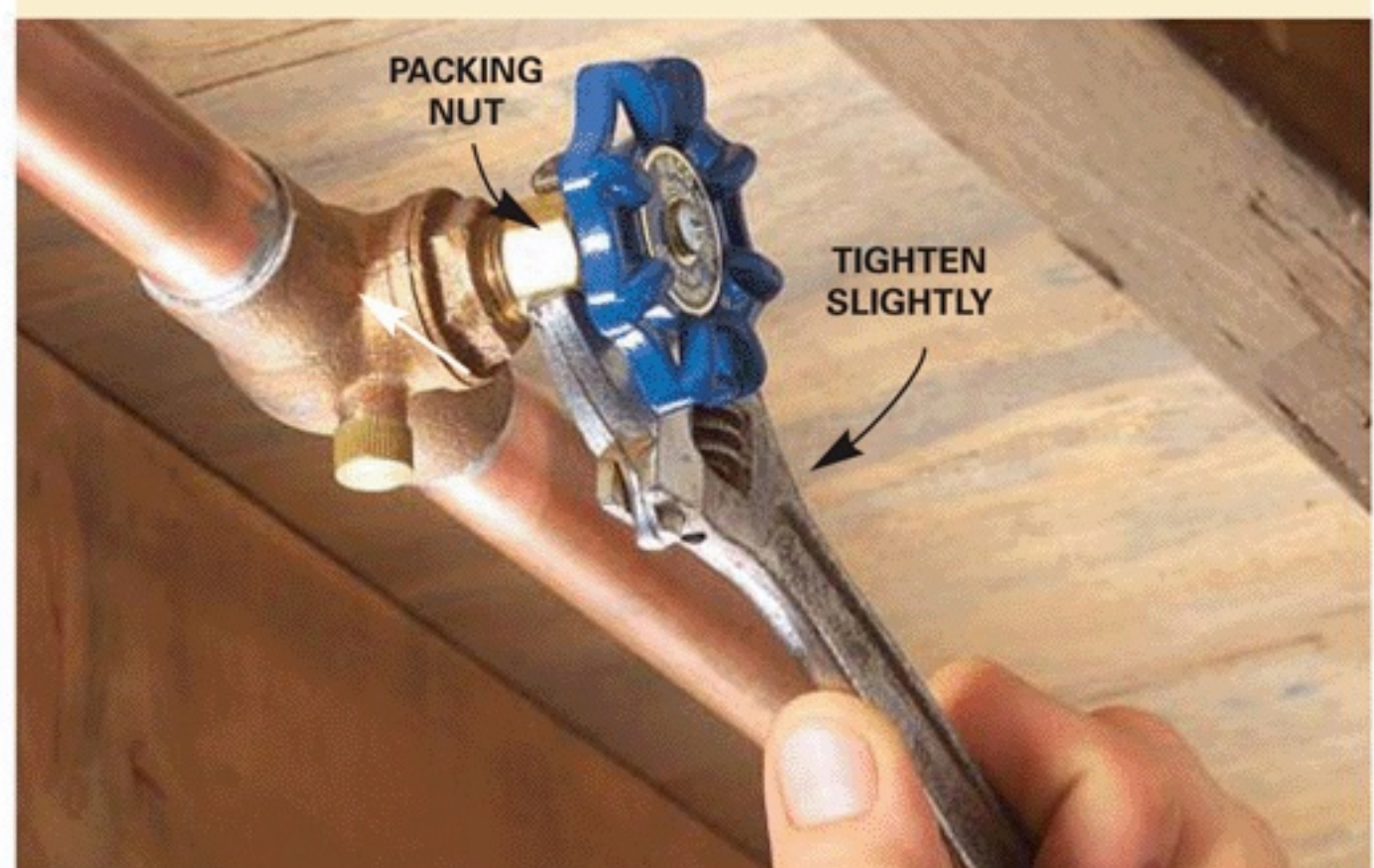


Replace a faucet aerator

Over time, aerators get clogged with minerals or other bits of stuff that break loose from the inside of the pipes. Remove the aerator by turning it clockwise when you're looking down on it. You may have to grip it with pliers to unscrew it. Wrap the ends in tape to avoid damaging the finish. Once it's off, you can take the parts out of the aerator and clean them, but it's usually better to simply replace it. Take the aerator along to the hardware store to find an exact thread match.

Stop a leaky valve

Plumbers say that leaks are one of the most common complaints they get. Valves are one of the main culprits because they have moving parts and seals that can wear out. The next time you see a suspicious puddle of water, look for a leaky valve before you call the plumber. Look at the valve to see if water is leaking out around the valve stem. If it is, try turning the packing nut about an eighth turn with a wrench. You'll know if you overtighten the nut because the valve will be hard to turn. If tightening the nut doesn't stop the leak, the fix is a little tougher. You'll have to shut off the main water valve, remove the handle and nut, and add to or replace the packing material—still a pretty easy fix.



Fix an erratic sink sprayer

Inside your faucet, there's a "diverter" valve, which stops the water flow to the spout and sends it to the sprayer when you press the spray head's trigger. Here are the symptoms of diverter trouble:

- Very little water, or none at all, comes out of the sprayer when you press the trigger. A bad sprayer head can cause this, but more often the diverter is the culprit. To check this, remove the spray head and turn on the faucet. If the water flow out of the hose is weak, the diverter is to blame.
- The sprayer pulsates like a machine gun.
- Water continues to flow out of the faucet spout when you're using the sprayer.

Often, a misbehaving diverter needs only light scrubbing with a toothbrush and a good rinse. But since removing a diverter usually requires major faucet disassembly, it's best to simply replace the diverter rather than risk taking it apart again.

Diverter styles and removal procedures differ widely. Some are small valves like the one shown here. Others are larger cylinders that don't look like valves at all. Some newer diverters aren't inside the faucet, but are instead connected to the sprayer hose below. So the first step in diverter repair is finding a diagram of your faucet. If you can't find your owner's manual, do an online search. Type in the manufacturer of your faucet followed by "faucet parts diagram." With a little searching, you'll find an illustration showing your faucet's internal parts. You'll also find several sources for replacement parts online. To find a local supplier, check the yellow pages under "Plumbing, Fixtures." Diverters cost from \$7 to \$20.

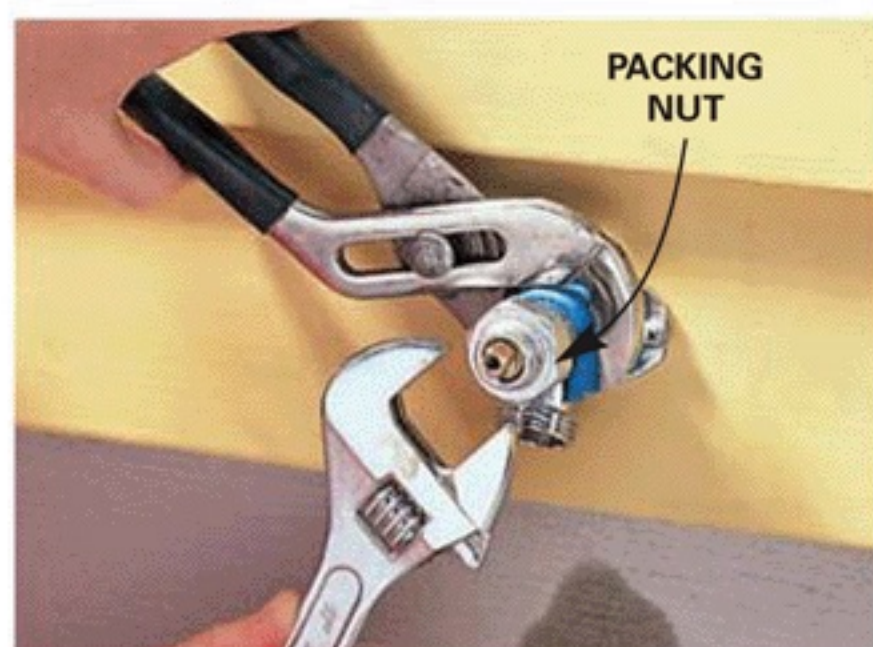


Disassemble the faucet to access the diverter. Clean or replace the diverter and reassemble the faucet.

Repair an outdoor faucet

Most outdoor faucets, including the freeze-proof one shown, have a washer at the end of the long valve stem. Freeze-proof faucets are particularly prone to worn washers because when the faucet is turned off, it continues to drain for a few seconds;

consequently, people tend to turn the faucet tighter, damaging the rubber washer. Before beginning your repair, turn off the faucet's water supply.



1 Unscrew the handle and remove the packing nut. Hold the faucet steady while loosening the nut to avoid twisting the interior pipe. Even hard copper pipe can be twisted.



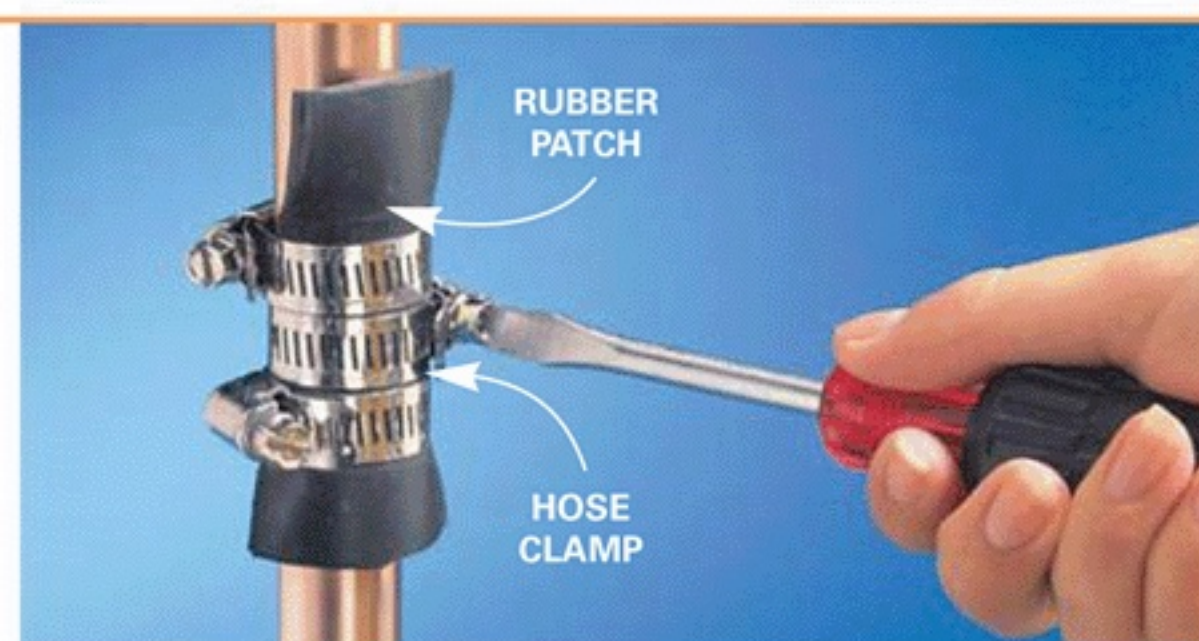
2 Pull the stem out of the faucet. For removal, some stems have to be turned so a key lines up with a slot; reattach the handle to turn and pull the stem.



3 Remove and replace the rubber washer on the stem end. If there are rubber O-rings on the stem, replace these as well.

Temporarily fix a leaking pipe

The best way to deal with a hole in plumbing is to replace the section of pipe, but a temporary fix helps you deal with emergency leaks. First, shut off the water supply. Next, slit a section of hose or a rubber coupler, available at hardware stores, and place it over the hole. Finally, secure the rubber patch with hose clamps. Larger holes will require multiple clamps placed side by side.



Tips for weed-free lawns

Kill any weed

Whether you want to eliminate weeds before they start growing again (early in the year is the best time to attack weeds) or kill weeds that are already overtaking your

lawn, these tips will help you succeed. Most of the weed treatments you need are available at home centers, and the others at garden centers (see the Buyer's Guide, p. 29).

Kill broadleaf weeds

A broadleaf weed is any undesirable lawn plant that isn't a grass. The plants have actual leaves on stems, and contrary to the name, many have narrow rather than "broad" leaves. Dandelions, plantain, ground ivy (creeping charlie) and ragweed are a few of the most common broadleaf weeds.

Early

Before broadleaf weeds start growing in the spring, apply a product called Hi-Yield Turf & Ornamental Weed & Grass Stopper Containing Dimension, which is a preemergent herbicide. It kills weeds before they sprout from seed and even kills some weeds that have just started to grow. Spread the product on the yard between your first and third mowings in the spring. The company says a single application will last a full 120-day season. This is as close to a one-size-fits-all magic bullet as you'll find for eliminating annual weeds. Other products won't target both broadleaf and annual grassy weeds and stop them from growing. It's available at lawn and garden centers (call first to make sure). A 35-lb. bag that treats up to 15,000 sq. ft. costs about \$30. If you can't find it in your area, your second choice is to use another preemergent herbicide.

Park your broadcast spreader over a tarp or on the driveway (grains may leak out, and a heavy dose of herbicide on the yard can kill even healthy grass). Fill the spreader (Photo 1) and distribute the herbicide evenly over your lawn.



1 Spills will kill your grass. Park your spreader on a tarp or driveway when filling to avoid herbicide overdoses.

Late

If a few broadleaves pop up in the yard (you can always count on a few dandelions), spot-kill them with a post-emergence herbicide such as Ortho's Weed-B-Gon MAX (\$9 for a 32-oz. concentrate that covers 16,000 sq. ft.). Look on the label for "broadleaf killer" then check to see which weeds it targets. Some broadleaf herbicides also kill crabgrass. There's no need to treat the entire lawn, just the weedy areas. Don't let them spread and create a bigger problem.

Premixed herbicides are OK if you have a small lawn and only a few weeds. Otherwise, buy concentrates to mix yourself—they're a better value. Wait until the temperature is between 60 and 85 degrees F. (The herbicide vaporizes too soon in high temps, and weeds don't grow fast enough in low temps to absorb the chemicals.) Mix the herbicide with water (follow the directions) and pour it into a small pump sprayer (\$7 to \$15). Keep the nozzle 6 to 12 in. from the weed and spray until the leaves are slightly wet (Photo 2).



2 Spot-kill broadleaf weeds using a trigger-controlled pump sprayer until a mist forms on the leaves.

Healthy grass is the best weed preventer

Lawns that are nutrient-stressed are a breeding ground for weeds, so the best defense is a healthy lawn.

Fertilizer as needed to help your lawn. Proper fertilization improves lawn health, so grass can compete better and crowd out weeds—without a lot of weed killer.



Only spray the weedy areas of the yard—not the entire lawn. You'll introduce less herbicide into the environment.

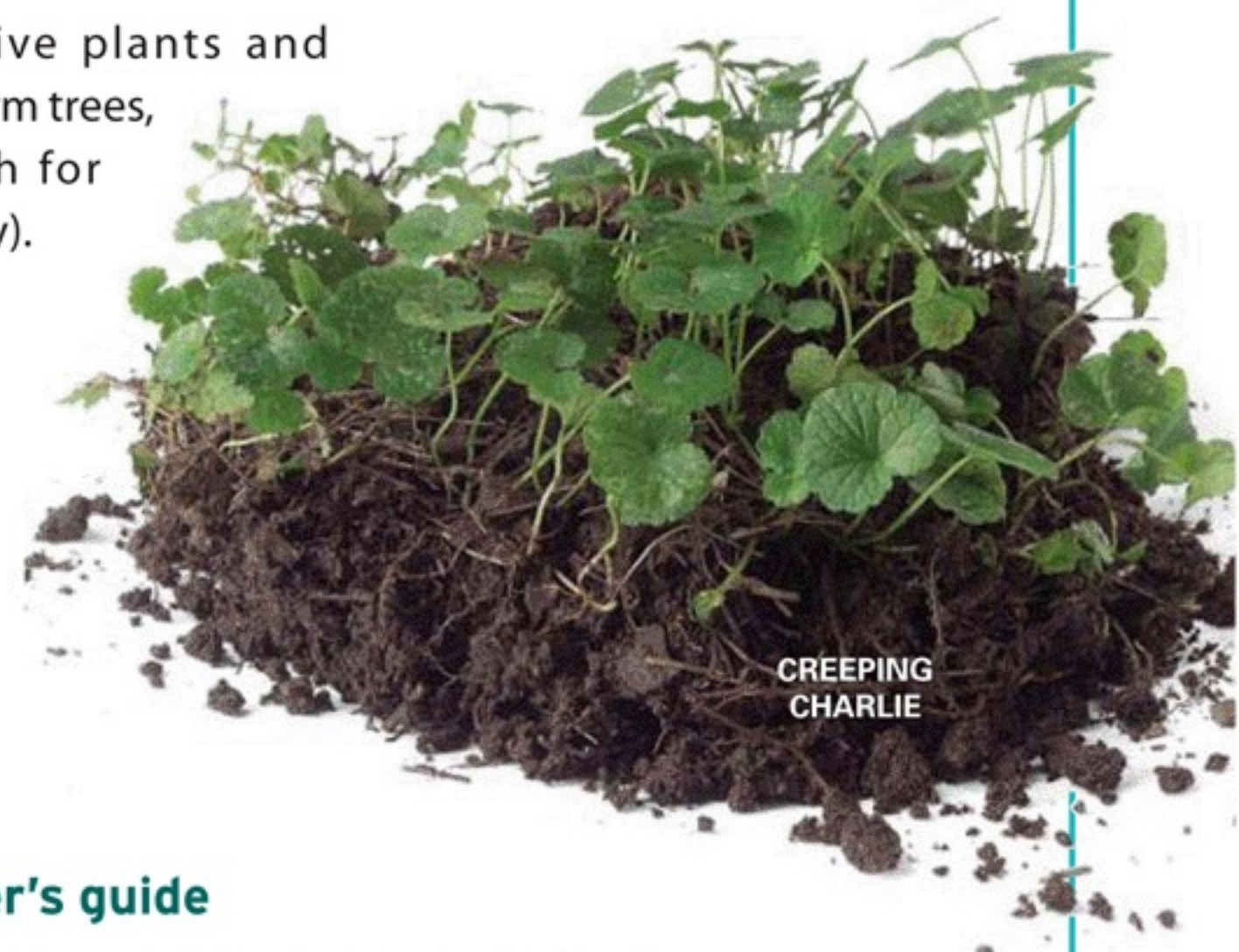


3 Cover large areas fast with a dial sprayer attached to a garden hose. Avoid spraying on a windy day so it won't drift onto (and kill) nearby plants.

Too late

If your lawn has lots of weeds scattered over large areas, don't waste time spot-spraying individual weeds. Killing the weeds is as quick and easy as spraying the weedy area with a hose.

Pour a concentrated postemergence herbicide (the same kind you used for spot-spraying) into a dial sprayer (\$11) and set the dial on the lid to the manufacturer's recommended mixture (such as 2 tablespoons per gallon of water). Attach the sprayer to a garden hose, turn on the water, and apply an even treatment to the weedy areas in the yard (Photo 3). Apply the herbicide when the weeds are actively growing in the late spring and early summer. You don't need to drench the weeds. A light misting will kill most weeds (if it doesn't, give them a second dose in a week). Spray only on a calm day. Even a slight breeze can carry vapors that can kill plants (anything that kills broadleaf weeds will also kill flowers or decorative plants and could harm trees, so watch for overspray).



CREeping CHARLIE

Buyer's guide

Bayer: The product line includes herbicides. bayer.com

Fertilome: Includes Hi-Yield Turf & Ornamental Weed & Grass Stopper Containing Dimension. fertilome.com

Scotts: Includes Ortho and Roundup. The product line includes grass seed, fertilizers and herbicides. (888) 270-3714. scotts.com

Kill annual grassy weeds

Annual grassy weeds sprout from seed each year. The weed dies in the fall, leaving behind seeds that germinate the following spring. Crabgrass is the most notorious grassy weed, but there are others, like yellow foxtail and nutgrass.

Early

Use a preemergent herbicide to kill annual grassy weed seeds in the spring before they germinate. Crabgrass preventer is the most common, but you might as well apply a herbicide containing Dimension in the spring because it also kills broadleaf weed seeds. Crabgrass often thrives along sidewalks and driveways because the ground is warmer there, so be sure to apply herbicide in those areas.

Late

The best way to handle a few scattered annual grassy weeds is to spot-kill them with a postemergence herbicide that's formulated for grassy weeds, such as Ortho's Grass-B-Gon (\$6 for 24 ozs.). Look for Grass Weed Killer or Crabgrass Killer on the label (Crabgrass Killer kills other grassy weeds too).

Mix the concentrated herbicide with water (per manufacturer's directions), then pour the mixture into a hand-held sprayer (\$7 to \$15). Spray the individual patches of weeds (Photo 1). To ensure that there's plenty of plant

material to absorb the weed killer, don't mow the weeds just before applying the herbicide or for three days after. If you don't kill annual grassy weeds now, you can expect them to seed and produce even more weeds next year.

Too late

There's only one remedy for yards taken over by grassy weeds—spray the entire lawn with a postemergence herbicide (like the ones used in the "Late" stage). Mix the concentrate with water in a pump sprayer (\$20; Photo 2).

Spray the yard with the herbicide in the late spring or summer. Apply just enough to get the weeds slightly wet. The weeds should start to die within five to seven days. Spot-kill any weeds that are still growing after seven days.



1 Spray a second dose on weeds that survive the first spraying. Hunt for survivors seven days after spraying.



2 Save money by mixing concentrated herbicides rather than using premixed versions. Concentrates give you about 60 percent more herbicide for your money.

Kill perennial grassy weeds

Perennial grassy weeds come back every year, just like your lawn grass, and are the toughest weeds to deal with. That's because the herbicides that kill these weeds will also kill your grass. Perennial grassy weeds like Dallis grass and quack grass have deep, expansive root systems that make it impossible to kill them by pulling them out. Quack grass is easy to identify—three or four days after you've mowed your yard, quack grass will be noticeably taller than the surrounding grass.



Always read the herbicide's label before applying to make sure it will kill the targeted weeds and not harm your lawn.

Early

To spot-kill the weeds, apply a nonselective herbicide, such as Roundup (\$22 for a 32-oz. bottle). Nonselective herbicides kill plants and weeds alike, so it has to be applied to the individual weeds by hand. Wearing cloth gloves over plastic gloves, wipe the herbicide directly onto the weed (Photo 1). Don't worry about covering every single blade. As long as you get most of them, the herbicide will absorb into the weed. It'll take seven to ten days before the weed starts to die. If it's not dead after two weeks, wipe on a second treatment.

Late

The solution is the same later in the year. But the longer you wait, the more work you'll have since these grasses continue to spread all spring and summer. The herbicide is most effective early in the season when grasses grow the fastest. As the weeds take root and become sturdier, they may require more applications to fully kill.



1 Apply herbicide to perennial grasses without killing the surrounding grass. Wear a cloth glove over a rubber glove. Dip your gloved hand in the herbicide and wipe it on.

Too late

Once there are too many weeds to spot-treat by hand, it's time for draconian measures. Kill everything and start over. Spray a nonselective herbicide on the weedy area (Photo 2). Wait two weeks. If they're not dead, spray them again.

Once the weeds are dead, mow them as short as possible. After spraying the herbicide, wait 14 days to plant new grass so the herbicide won't kill it.



2 Spray herbicide to kill patches of perennial grassy weeds. Mow the weeds after they're dead, then plant grass seed in the area.



Cost-effective weed control

Practice prevention: Mow to the ideal cutting height

Each type of grass has an ideal cutting height for good health and strong growth. When cut no lower than that height, and when cut before it gets too long, the grass will usually outcompete weeds as long as it's also fertilized and watered properly. Longer grass helps prevent weeds in a couple of different ways. The taller growth shades the ground, keeping it cooler and retarding weed seed germination. And once weed seeds sprout, they don't have as much sunlight as they need for hardy growth.

The chart at right shows the range of cutting heights depending on the grass type. If you don't know your grass type, you can go to scotts.com, 'Learn,' 'Identify your grass,' or even better, take a plug of turf to a garden center and ask the staff to help with the identification.

It's also important to mow your

grass when it needs it. That's when the grass is one-third above the ideal cutting height. Depending on the weather conditions and the time of year, that can mean mowing every week or two, or every four or five days. Keeping the height in check also means you're clipping off weed seed heads before they can mature and seed your lawn.

Ideal mowing height ranges

COOL-CLIMATE GRASSES

Bent grass	1/4 to 3/4 in.
Chewing hard or red fescue	1-1/2 to 2-1/2 in.
Tall fescue	1-1/2 to 3 in.
Kentucky bluegrass	1-1/2 to 3 in.
Perennial ryegrass	1-1/2 to 3 in.

WARM-CLIMATE GRASSES

Bahia grass	2 to 3 in.
Bermuda grass	1/2 to 1 in.
Blue grama grass	2 to 3 in.
Buffalo grass	2 to 3 in.
Carpetgrass	1 to 2 in.
Centipedegrass	1 to 2 in.
St. Augustinegrass	1 to 3 in.
Zoysia grass	1/2 to 1 in.



Don't fight weeds where grass won't grow

Poor light or soil conditions can make it all but impossible to grow grass in some areas. If you've tried more than once to nurture grass in an area and failed, it might be time to throw in the towel and treat the area with a landscaping alternative. The obvious choices are stone, mulch and attractive ground cover plants that tolerate the same conditions grass can't handle. Kill any weeds with a nonselective herbicide (re-treat survivors after 14 days). The herbicide will break down within two weeks and the ground will be safe for new plants. If you're covering the ground with a decorative material like stone or mulch, consider laying a weed-control fabric on the ground first to keep weeds from getting another foothold.

Control broadleaf weeds with the least amount of herbicide possible

The key to controlling broadleaf weeds is to use a broadleaf herbicide and distribute it with the smallest applicator necessary to do the job. That'll not only save time and money but also keep you from needlessly introducing chemicals into the environment.



Spot-kill weeds with a small pump sprayer. No matter how lush and healthy your lawn is, a few isolated weeds will pop up. That doesn't call for whole-yard treatment. Instead, spot-treat the weeds with a small, trigger-controlled, pump sprayer (\$7 to \$15). After pouring in the diluted herbicide, you pump up the pressure with a little plunger and then pull the trigger to release the spray right on the culprits.



Treat weed patches with a 1- or 2-gallon tank sprayer. Patches or clumps of weeds are best treated with a standard 1- or 2-gallon tank sprayer. After spraying, triple-rinse the tank with water. With each rinse, pump up some pressure and flush out the wand.



Use a dial sprayer when weeds are out of control. If your whole lawn is filled with weeds, you'll need to spray the entire yard, and a dial sprayer attached to your garden hose is the answer. It's fast and efficient. It's just a matter of adding concentrated broadleaf killer to the pot, and setting the dial at the top to the mixture called for on the herbicide container—for example, 2-1/2 tablespoons per gallon of water. Then hook up the garden hose and apply an even treatment to the weedy areas. Clear the yard of toys, furniture and anything else that can get contaminated by over-spray. And be sure to protect your flowers and bushes with plastic sheeting or cardboard. Remember that broadleaf killers will kill or harm anything with leaves—including your flowerbed.

Fast drywall fixes

Use aluminum for quicker wall repairs

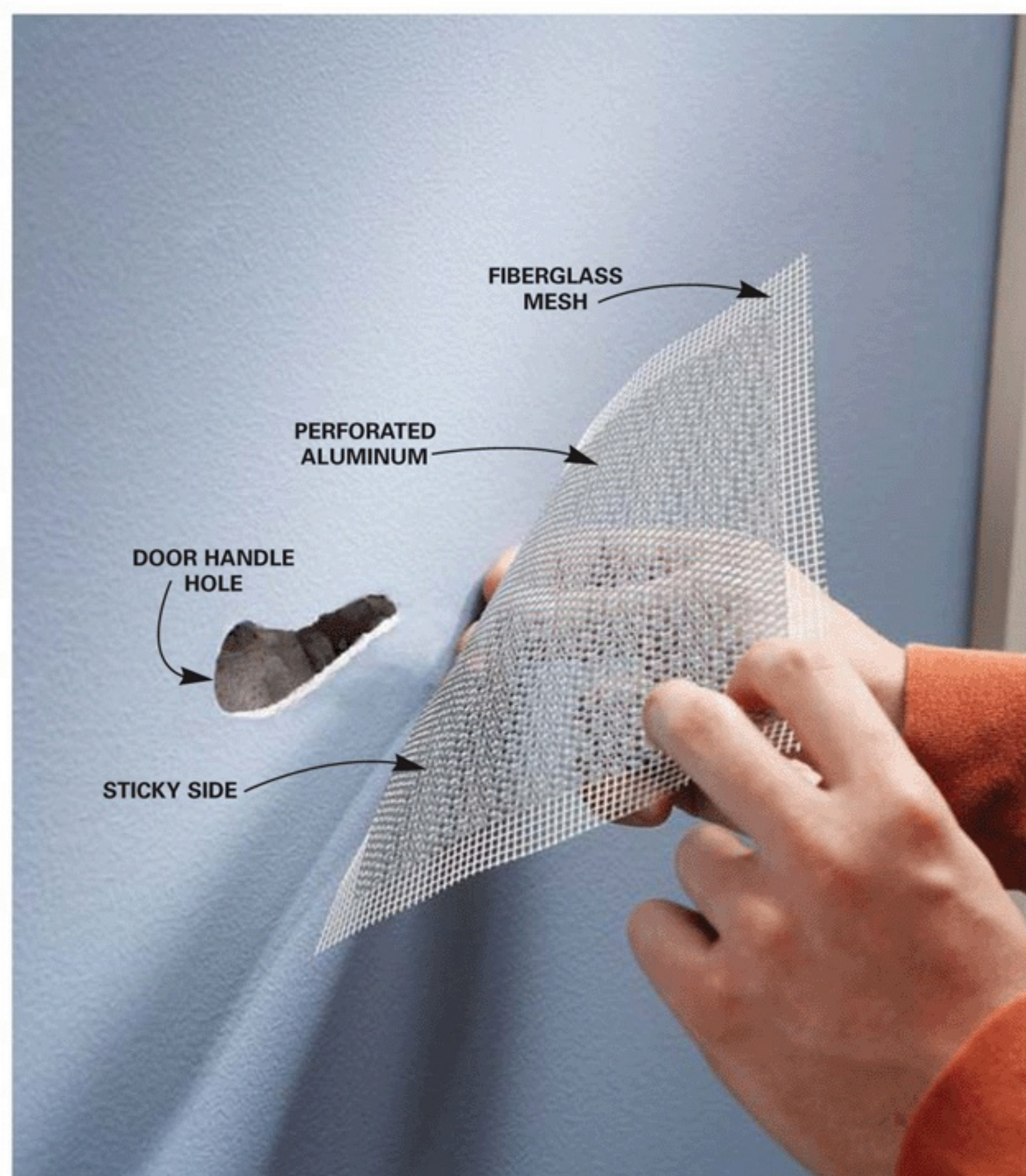
The traditional method of repairing holes in walls is to square the hole, put wood backing behind it, cut and screw on a drywall patch, and then tape the edges. Aluminum patches, available at home centers and paint and hardware stores for \$2 to \$4, give the same results with much less work. The patches, which come in 4-, 6- and 8-in. sizes, are stiff enough to span holes and thin enough to disappear after coating with joint compound and painting.

Select a patch large enough to overlap the hole on all sides by an inch, then stick the patch on (Photo 1). Patches can be cut or overlapped as needed.

Trowel on the first coat of joint compound over the patch, spreading the compound flat enough to see the outline of the mesh through it (Photo 2).

Allow the compound to dry overnight, then apply a wider second coat (Photo 3), followed by a final, third coat after the second coat dries. Spread the compound in thin coats extending 8 to 12 in. beyond the patch in all directions.

After the final coat has dried overnight, sand it smooth, prime and paint (Photo 4).



1 Clean off broken edges and tears around the hole. Then cover the hole entirely with the patch, sticky side toward the wall.



2 Spread the first coat of joint compound over the patch with a wide tapping knife. Let it dry overnight.



3 When it's dry, recoat the patch and then feather out the compound on all sides to make the patch blend in.



4 Sand the patched area with a sanding sponge until it feels smooth and even.

Fix damaged corners

Metal corner bead dents easily, causing cracks in the wall. Fortunately, the fix is relatively simple too. Use a hammer to knock the bead back into shape with several light taps instead of hard blows (Photo 1). Use a level to make sure the bead doesn't stick out past the finished walls or you won't get a clean corner (bury the bead in the wall a little if needed). Round any sharp edges on the bead with a file.

When you hit the bead with a hammer, you probably sent cracks up and down the corner, especially if the bead wasn't taped. Place mesh tape over the cracks, then apply joint compound over the tape and corner bead on one side only (Photo 2). Work on one side at a time—the first side needs to be hard so you can square the other side. Once the first side is dry, apply joint compound to the second side. Then recoat the corner, let it dry and sand it smooth.



1 Shape the corner bead with a hammer until it's flush with the walls. Don't worry about making drywall cracks along the corner worse.



2 Cover the crack with mesh tape, then cover the tape and the corner bead with joint compound. Fill in one side, let it dry, then fill in the other side.



Quick sanding cleanup

If you're sanding a small drywall patch or drilling a hole and you don't want to haul out the vacuum cleaner to clean up after such a small job, use a fabric softener sheet instead. It acts like a magnet for sawdust and drywall dust—one or two swipes and your cleanup is done.

Cut out wall cracks

When homes settle, drywall cracks sometimes shoot out above or below windows and above doors. You can't just cover or fill the cracks with joint compound—they'll come back. Instead, fix the cracks with joint compound and mesh tape. Mesh tape gives you less buildup than paper tape and is plenty strong. Protect the window or door trim with masking tape before starting the fix.

To fill the crack, use a utility knife to cut a V-shaped groove along its entire length (Photo 1). Fill the groove with joint compound, let it dry, then sand it flush with the wall. Place mesh tape over the crack (Photo 2). Apply joint compound over the tape and feather it out 2 to 4 in. on each side of the tape. Let the compound dry, then apply a second and third coat, feathering it out 8 to 10 in. from the tape with a 10-in. taping blade (\$7).

1 Cut a V-shaped groove in the crack, removing everything that's loose, even if it means cutting all the way through to the back of the drywall.



2 Fill the groove with joint compound, cover it with mesh tape, then cover it with more compound.



Fill nail pops and small holes

Small holes from brads, nails or picture hangers are simple to fix. Gently tap on the wall with the handle of your putty knife to drive any standing drywall facing paper below the surface and create a tiny crater, and then fill it with wall filler.

Nail pops are usually caused by fasteners that are driven through the drywall paper during installation, or by a gap between the drywall and the stud. Then vibration and seasonal wood swelling and shrinkage cause the overlying filler to pop out from the wall. Drive in a 1-1/4-in. drywall screw near the nail pop so the head penetrates just below but not through the drywall paper. Then remove the old screw by pushing the screw gun tip through the middle of the nail pop and backing out the screw. If it's a drywall nail, drive it into the stud with a nail set and leave it. Then dimple the old hole (Photo 1) and fill it and the new screw head with two coats of wall filler (Photo 2).



Perfect wall patch every time

Next time you have to patch a large hole in your wall, instead of squaring it up or struggling to get the exact measurements, just trace the hole on wax paper to use as a guide to cut the new piece. Tape the wax paper over the hole, then run a permanent marker around the edges of the hole. Cut out the shape, then tape it to the new drywall and cut it out.

Tips for BIG energy savings

10-step plan to save electricity

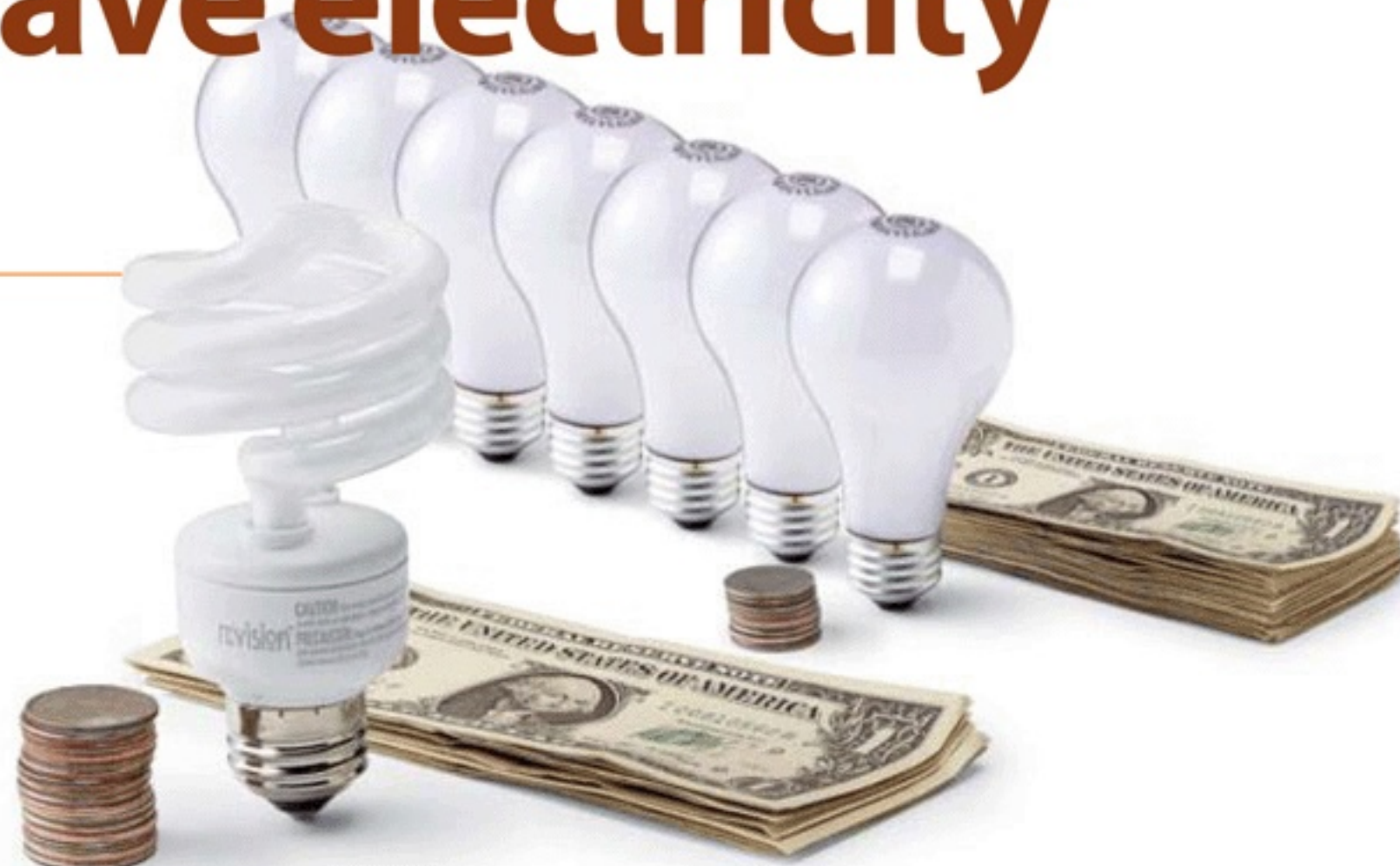
1 Switch to CFLs

Savings: Up to \$35 per bulb

Replacing incandescent bulbs with compact fluorescent light-bulbs (CFLs) is one of the quickest, easiest ways to save money. CFLs use about 75 percent less energy and last up to 10 times longer than incandescent bulbs. This can save you up to \$35 in electric costs over the lifetime of each bulb. Switching to CFLs in the five most frequently used fixtures in your house will save about \$60 per year, according to Energy Star.

Choose CFLs with the Energy Star label to get the greatest savings. Keep in mind that light fixtures with dimmers require special CFLs; read the label.

When your CFLs are finally spent, recycle them (to find locations, visit lamprecycle.org).



You'll spend \$4 for a CFL bulb that will provide 10,000 hours of light and use \$10.40 of electricity (at 8¢ per kilowatt hour). To get the same output with incandescents, you would have to use seven bulbs, which would cost a total of only \$2.25, but the electricity would cost \$48.



2 Buy Energy Star appliances

Savings: \$35 to \$600 a year

When you shop for appliances, look for the Energy Star label. It means the appliance meets certain energy-efficiency guidelines. The average household spends \$2,000 each year on energy bills. Energy Star says that appliances

bearing its label can cut those bills by 30 percent, for an annual savings of about \$600. But you don't have to replace everything to see a savings. Just replacing an eight-year-old refrigerator with a new Energy Star model can save \$110 a year or more in electricity.

3 Install smarter switches

Savings: Up to \$100 a year



1 Motion sensors are the perfect solution for left-on lights. They turn off automatically so you don't waste electricity.

Motion sensors (occupancy sensors) automatically turn lights on and off so you only get (and pay for!) light when you need it (Photo 1). Using motion sensors can save you \$100 per year. Some motion sensors need to be manually turned on but turn off automatically. They're great for bedrooms because they won't turn on when you move in your sleep.

Use timers to control bath fans so the fan will run for a preset time to air out the room and then automatically turn off (Photo 2). Timer switches start at \$21. Be sure the timer you buy is rated for motors, not just lighting (check the label).



2 A timer lets you turn on the fan and walk away. You don't have to remember to come back later and turn it off.

4 Service your air conditioner

Savings: Up to \$65 a year

Roughly half of an average home's annual energy bill (gas and electric), about \$1,000, is spent on heating and cooling. Air conditioners placed in direct sunlight use up to 10 percent more electricity. If yours sits in the sun, plant tall shrubs or shade trees nearby—but don't enclose the unit or impede the airflow. Place window units on the north side of the house or install an awning over them.

Keep your window or central air conditioner tuned up so it runs at peak efficiency. Every two or three years, call in a pro to check the electrical parts and the refrigerant (expect to pay \$150).

If your central air conditioner is more than 12 years old, replacing it with an Energy Star model can cut your cooling costs by 30 percent and save maintenance costs. The payback for replacing a 12-year-old system is typically about eight years. See p. 112 for more on AC maintenance.



The best way to keep your air conditioner running at peak efficiency is to spend a couple of hours each year on basic maintenance—cleaning and straightening the fins, changing the filter and lubricating the motor.

5 Kill energy vampires

Savings: Up to \$100 a year

Seventy-five percent of the electrical use by home electronics occurs when they're turned off, according to the Department of Energy. These "energy vampires" suck electricity all day long—costing you an extra \$100 each year. So if you'd like to keep that Ben Franklin in your wallet, unplug your electronics or plug them into a power strip, then turn off the strip.

Don't worry about losing the settings on new computers and TVs. They have a memory chip that resets everything when you power back up. If you have an old VCR or other devices that flash when the power goes out, keep it plugged in. Some power strips, like the BITS Smart Strip shown (\$40 at energyfederation.org; 800-379-4121), have a few outlets that always have power even when you flip off the switch.



Time-of-use meters replace the existing meter and attach to the meter box. They enable you to pay less for electricity used at certain times of the day.

Central Hudson Gas & Electric Corp.

6 Change furnace filter

Savings: Up to \$60 a year

Keeping your furnace (gas or electric) tuned up has two big benefits: It makes the furnace run efficiently and it prolongs the furnace's life span.

Change the filter every month of the heating season (or year-round if the filter is also used for A/C). Be sure you insert the new one so it faces the right way. The filter protects the blower and its motor; a clogged filter makes the motor work harder and use more power.



7 Get smart metering

Savings: Up to \$140 a year

Smart metering programs vary among utility companies, but the basic idea is the same: The utility installs a special "smart" meter that tracks how much electricity you're using. The utility uses that data to make sure its power grid doesn't get overloaded and cause blackouts. If the grid nears capacity, the utility can shut off major appliances in homes for short periods of time (such as 15 minutes per hour). Not all companies offer smart metering, but some do and many others are considering it.

What's in it for you? Money! Some programs pay about \$7.50 per month for sign-

ing up. Others let you view your home's usage online in real time so you can better manage your electrical consumption. Others let you choose "real-time" or "time-of-use" pricing that allows you to pay less for electricity that's used during off-peak hours (for example, on weekdays from early afternoon until 8 p.m.). These plans reward you for using electricity when it's cheapest. According to SRP, a power utility company, the plans cut 7 percent off your bill, which is \$140 for the average \$2,000 yearly energy bill. Check with your local company to find out what programs are available in your area.

8

Save on electric water heating

Savings: Up to \$25 a year

If you only use an electric water heater at certain times of the day, you're wasting electricity keeping the water hot 24/7. To solve that problem, install an electronic timer switch (Photo 1; \$40 at home centers). Timers are available for 120- and 240-volt heaters. They can be programmed for daily or weekly schedules so you only heat the water when you need it. A timer can save you \$25 per year.

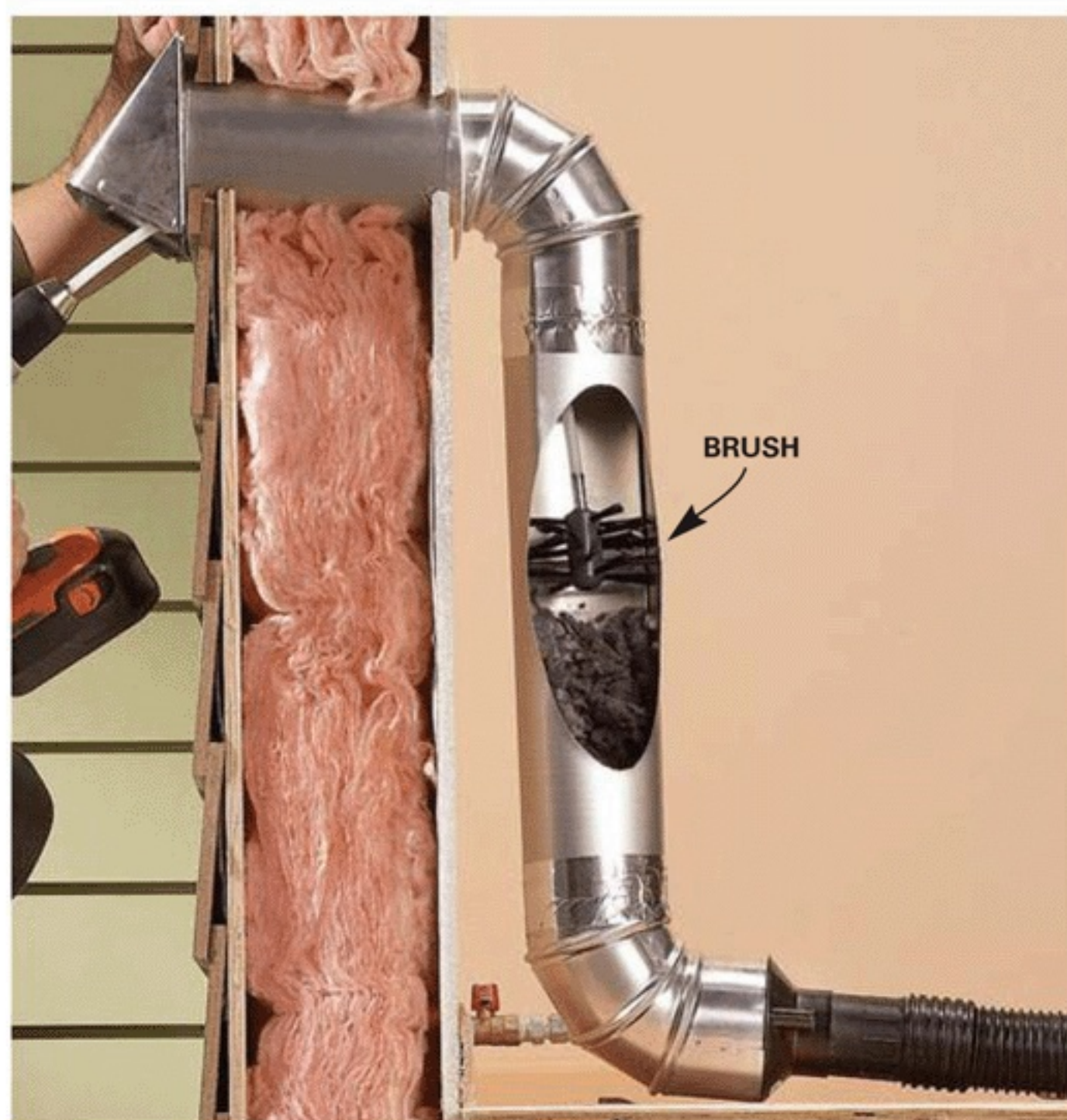


A timer turns on the water heater only when you need it, so you don't waste electricity heating and reheating water that sits in the tank.

9

Clean out the lint for dryer efficiency

Savings: Up to \$25 a year



A clogged lint screen or dryer duct drastically reduces the efficiency of your dryer, whether it's gas or electric. Clean the lint screen after each load and clean the exhaust duct once a year. The Lint eater shown here has an auger brush that attaches to a drill to clean out the ducts. It's available at Lowe's for about \$35.

Electric dryers use about \$85 of electricity annually. A dirty lint screen can cause the dryer to use up to 30 percent more electricity (\$25 per year), according to the Consumer Energy Center. Lint buildup is also a common cause of fires.

Dry loads of laundry back-to-back so the dryer doesn't cool down between loads (a warm dryer uses less energy). And only run the dryer until the clothes are dry. Overdrying damages your clothes and runs up your electric bill.

10

Run your refrigerator for less

Savings: Up to \$60 a year

Your refrigerator uses more electricity than all your other kitchen appliances combined. To keep its energy costs down, clean the coils twice a year, which improves efficiency by 30 to 50 percent.

Your fridge and freezer run more efficiently when they're full. Put water containers in the fridge and ice bags in your freezer to keep them filled. Keep the refrigerator setting between 35 and 38 degrees and the freezer between 0 and 5 degrees F.

Refrigerator door seals wear out over time. Test your seal by closing a dollar bill in the door. If it pulls out easily, replace the seal.

If your fridge was made before 2001, it's using at least 40 percent more electricity than new Energy Star models.



Brush and vacuum the coils at the bottom or the back of the refrigerator. A coil cleaning brush (\$6 at appliance parts stores or amazon.com) is bendable to fit in tight areas.

Cut your heating bills

Stop fireplace heat loss

Wood-burning fireplaces can warm up a room, but more often, they rob a house of heat by letting it escape up the chimney. If you have a modern fireplace with a cold air intake from outside, make sure you equip it with an airtight door. If you have an older fireplace that uses room air for combustion, equip it with a door that has operable vents. And only keep those vents open when you have a fire in the fireplace. Otherwise, heat will constantly be sucked out of the house.

Airtight doors have gaskets that seal the doors to stop air leaks. Prices start at \$700 (yes, that's a lot compared with the cost of regular doors, which start at about \$230). Enter "fireplace doors" in a search engine to find local retailers.



Airtight fireplace doors fasten to the masonry opening like other door systems, but they seal the area to keep heated air from leaking up the chimney.

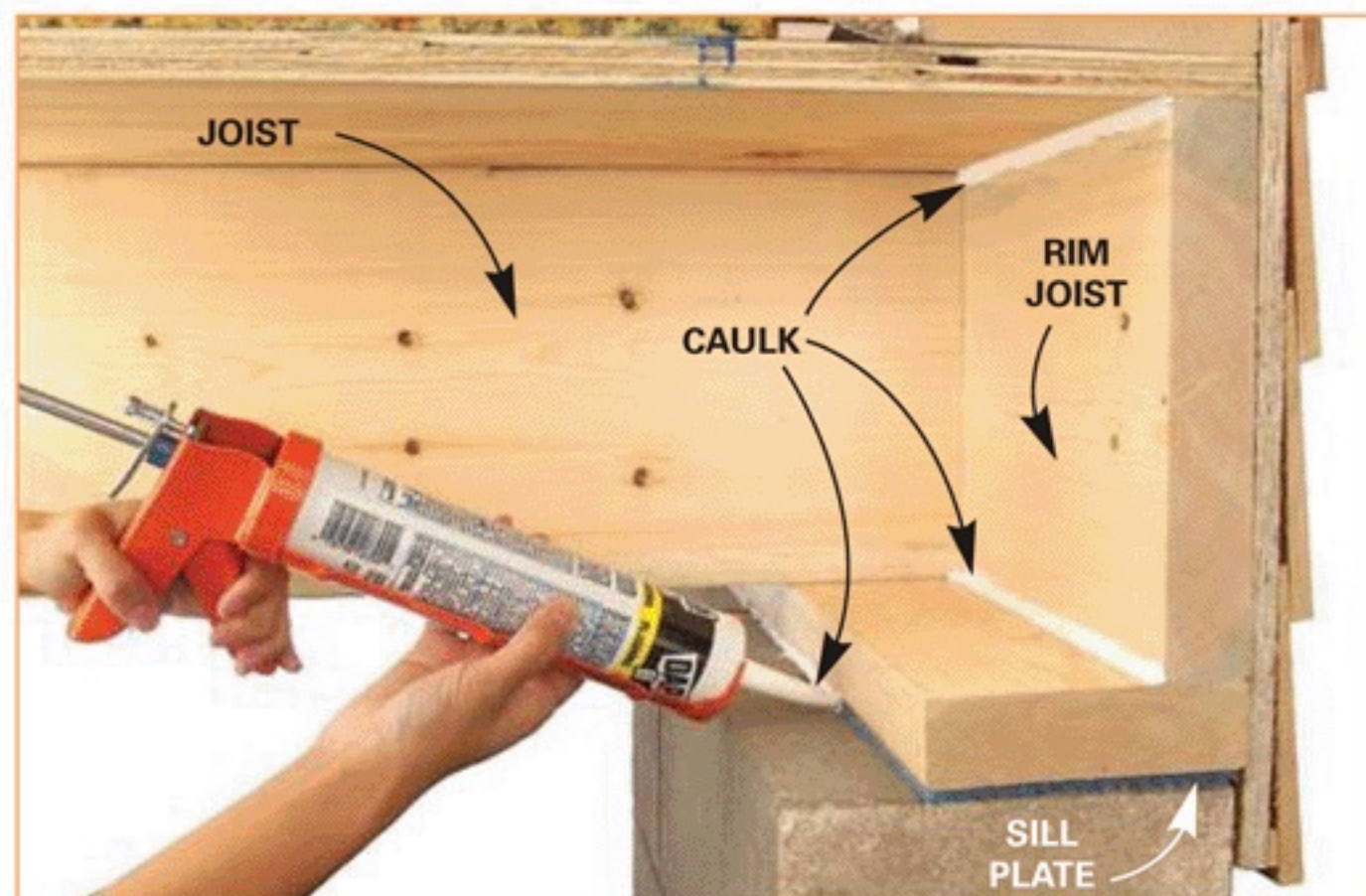


Hearth, Patio & Barbecue Association

Seal basement air leaks

Sill plates and rim joists are usually poorly insulated (if at all) and very leaky. So if you have an unfinished basement, grab some silicone or acrylic latex caulk to seal the sill plate. If you simply have fiberglass insulation stuffed against the rim joist, pull it out. Run a bead of caulk between the edge of the sill plate and the top of the foundation wall. Use expanding spray foam anywhere there are gaps larger than 1/4 in. between the sill and the foundation. For hollow-block foundations, stuff fiberglass insulation in the holes, then seal it with expanding foam.

Caulk along the top and bottom of the rim joists and use expanding foam to seal around holes for electric, water and gas lines. Then cut rigid foam insulation to size and place it against the rim joist. Caulk around all four sides of the foam insulation.



Caulking the sill plate and the rim joist stops air leaks along the foundation.



The auditor closes all doors and windows, then inserts a blower in the doorway to test for air leakage.

Get an energy audit

A surefire way to find air leaks and identify insulation problems is to have an energy audit. The audit, which takes two to three hours, uses a blower door test and an infrared camera to pinpoint leaks and identifies ways to improve energy efficiency. It costs \$250 to \$400 (schedule the audit through your utility company and ask about rebates).

An energy audit is worth the investment because it's almost impossible to find most sources of energy loss on your own. You'll get a detailed report listing upgrades you can make to cut heat loss and use less energy.

Turn down the heat and still be comfortable

Turning down the thermostat during the winter months saves money. According to the Department of Energy, for every degree you lower the thermostat, you'll save 1 percent on your energy bill. But turning down the heat has a big drawback—you have to wear extra clothes to stay warm. The solution? Use a space heater to stay comfortable in the room where family members gather, like the living room. Fireplaces and fireplace inserts can provide space heating, but electric heaters are the easiest way to warm up a room.



Baseboard, fan-forced air and oil-filled electric heaters all have roughly the same energy efficiency, although oil-filled units are the quietest (but are also larger and heavier). You'll have to turn down the heat enough (usually 5 degrees F or more) to offset the cost of the electricity used by the space heater and still pocket a savings. Space heaters range in price from \$30 to more than \$100. You can buy them at home centers, department and discount stores and amazon.com.

A towel warmer (\$50 and up) can act like a small space heater for your bathroom and provide you with a toasty towel after bathing. There are freestanding units and units that mount to the wall and are plugged in or hard-wired. Towel warmers are available at comfortchannel.com and other online retailers. Towel warmers don't save energy, but they can keep you warm in the bathroom when the house thermostat is turned down.



Space heaters cut heating bills only if you turn down the temperature in the entire house. The heaters work best in walled-in rooms (rather than in open spaces), where the heat can be contained.

Add attic insulation

In most homes, but especially in older homes, adding insulation in the attic will cut heat loss. At a minimum, homes should have attic insulation between R-22 and R-49 (6 to 13 in. of loose fill or 7 to 19 in. of fiberglass batts). Check with the local building department to find the recommended level for your area, or visit www1.eere.energy.gov/consumer/tips/insulation.html.

Stick your head through the attic access door and measure how much insulation you have. If your insulation is at or below the minimum, adding some will lower your heating bills.

If you need to add more, go with loose-fill insulation rather than fiberglass batts even if you already have fiberglass. Loose fill is usually composed of cellulose or fiberglass and lets you cover joists and get into crevices. Pros charge about 70¢ per sq. ft. to blow in 7 to 8 in. of insulation. You can rent a blower (\$55 a day) and do the job yourself for less than half that cost, but it's a messy job and you have to watch your step so you don't go through the drywall "floor" in the attic.



Add loose-fill insulation if your attic is underinsulated.

Johns Manville



Quilted curtains cover drafty windows, making your room feel warmer at a lower temperature.

Install quilted curtains to block drafts

If you're turning up the heat in the house to compensate for drafty windows, consider quilted curtains, which can increase your comfort and let you keep the temp down. The curtains are available in various colors, patterns and sizes. Enter "quilted curtain" in a search engine to find retailers. Online sources include plowhearth.com and amazon.com. Prices start at about \$70, and a curtain can be installed in less than 10 minutes on your existing curtain rod.

Make your windows work for you

Keep open the blinds or drapes on windows with direct sun exposure (usually on the south side of the house) to let the sunlight heat the room. Heating doesn't get any cheaper than this! At night, close the blinds or drapes to cover the cold glass.

Use a leak detector to find drafts

If your home is drafty, use a handheld leak detector, like the Thermal Leak Detector from Black & Decker (\$50; blackanddecker.com). The battery-operated tool uses infrared sensors to identify spots that are warmer or colder than the surrounding area, signifying an air leak or poor insulation. Of course, you have to do some detective work to figure out the problem and how to fix it.



Point the Thermal Leak Detector at windows, walls and ceilings. When the detector finds a cold or warm spot, the LED light changes from green to red (for warm) or blue (for cold).

Cut heat loss with storm windows

Storm windows aren't new, but they're definitely improved: New ones open and close and can be left on year-round. Some offer low-emissivity coatings to further cut heat loss. You can use low-e versions even if your windows already have a low-e coating.

You'll see the biggest payback when they're used over single-pane windows. But don't use storm windows over aluminum windows—heat buildup between the two windows can damage the aluminum, and drilling holes for installation can cause leaks.

You can buy or special-order storm windows at home centers, but you may have trouble finding low-e models. Two sources are ProVia Door (proviadoor.com; 800-669-4711) and Kaufmann Window & Door (kaufmannwindow.com; 800-860-4455). Storm windows start at \$30. Measure the height and width of the window (from the outside) before ordering. Do-it-yourself installation takes about 30 minutes per window.



If you have single-pane windows, installing storm windows is one of the most cost-effective improvements you can make to reduce heat loss.

Our 11 best energy savers



1. Seal leaks in ductwork.

2. Clear space in front of heating units, registers and radiators.

3. Reduce the energy used for heating water by using low-flow showerheads.

4. Wash clothes in cold or warm water. Rinse with cold.

5. Dry laundry loads consecutively to maximize dryer efficiency.

6. Seal around pipes and ducts that penetrate outer walls.

7. Replace incandescent bulbs with efficient compact fluorescent bulbs.



8. Lock windows to create a better seal.

9. Use timers or motion detectors to turn off lights when not needed.

10. Add weather stripping and caulking around doors and windows.

11. Insulate any exposed hot-water pipes.

Stuffed duct

After we moved into our house, we couldn't figure out why one of the bedrooms was too hot in the summer and too cold in the winter.

After buying fans and a space heater (and driving up our electric bills), I decided to check out the ductwork. I took off the cold-air grilles and the duct looked fine. But when I took apart the duct in the basement, I found it crammed with toys! Apparently the previous owner's kids had found a great hiding place for the really important treasures. The toys left there filled a 2-gallon bucket!

Now that bedroom is the most comfortable room in the house.



Tips for appliance repairs

Fix a burner that won't heat

If one of your electric burners isn't heating, it could be a bad burner, a bad connection in the burner socket or a faulty switch.

Replace the burner or socket

To see if the problem is the burner, exchange the burner with one that you know works (Photo 1). If that burner won't heat, the problem is either the burner socket or the infinite switch. (The burner prongs plug into the burner socket.) Connections in the burner socket can burn out and fail to provide power. If the prongs look burned, inspect the socket. If the socket looks charred or burned, replace it. Photo 2 shows how to replace a burner socket.

CAUTION

Always unplug your electric range before working on it.

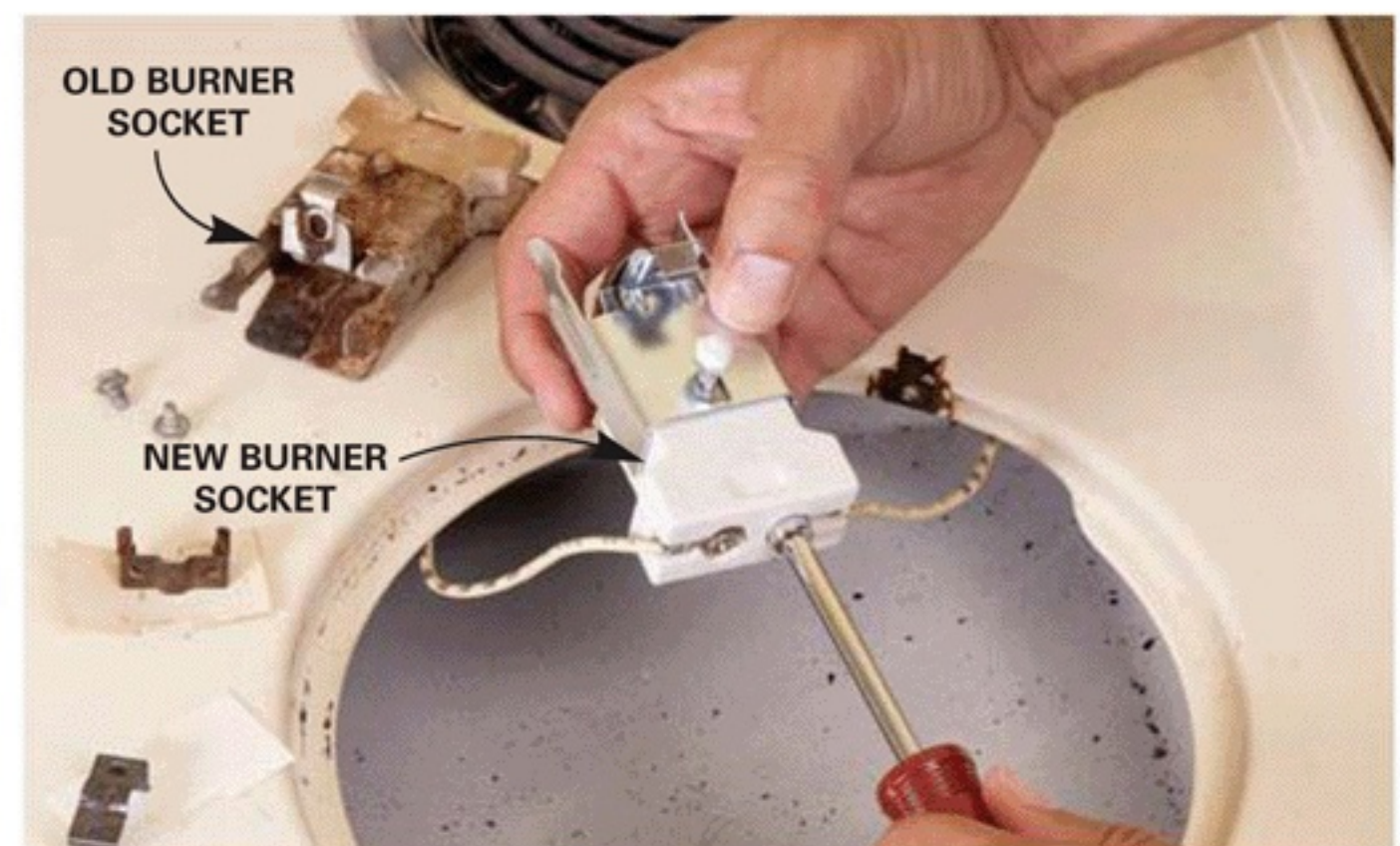
Replace the switch

The knob you turn to control the burner temperature slides over the shaft of the infinite switch. If the switch burns out, your burner won't get power. Test the infinite switch if you know the burner and burner socket are good but the burner still won't heat. The back panel on this range had to be removed to access the infinite switch. Your range may be different.

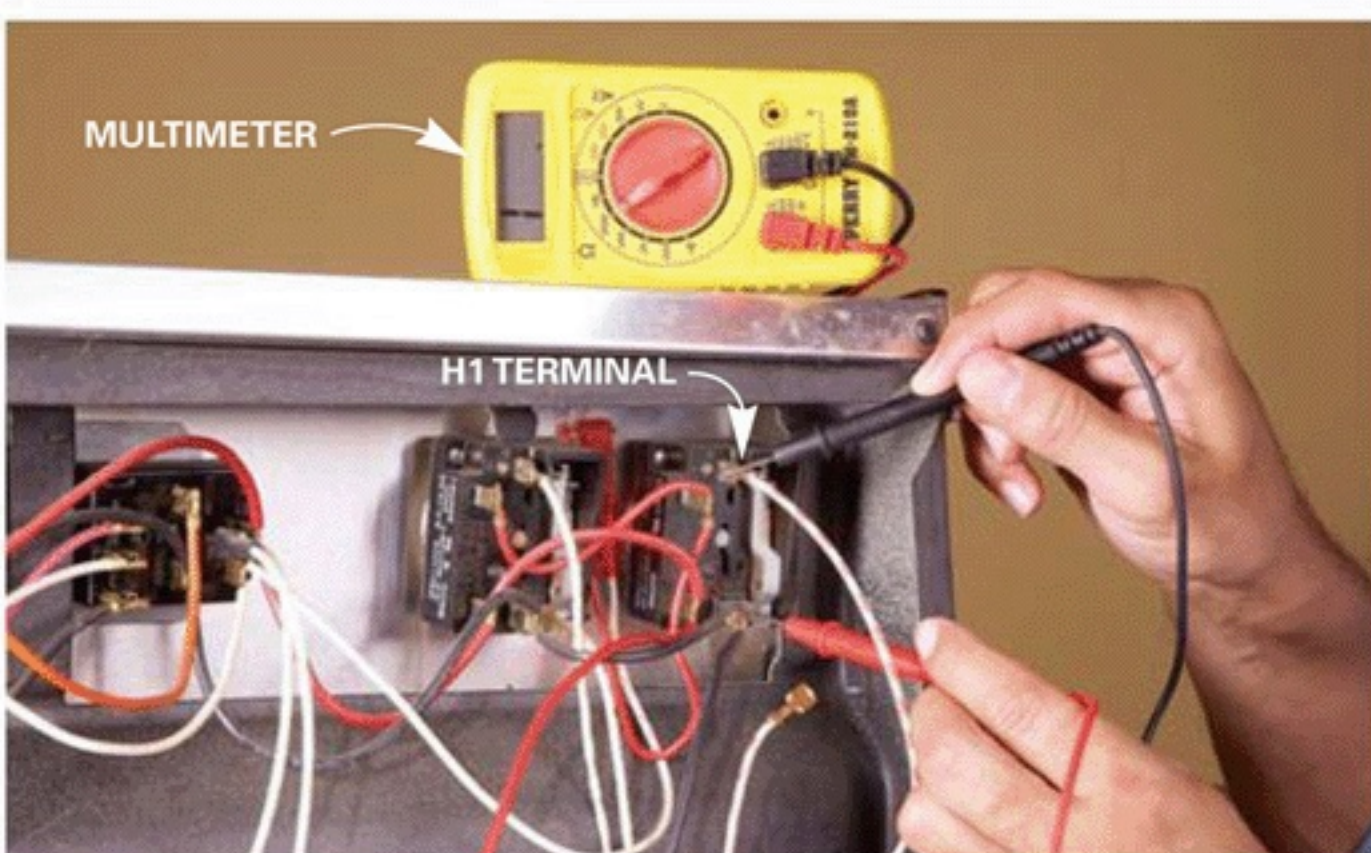
With the range unplugged, test the switch with a multimeter set to RX-1 (Photo 3). If the meter reading remains the same, the infinite switch is bad and should be replaced (Photos 3 and 4).



1 Test the burner by replacing the burner that doesn't work with one that you know does.



2 Replace a burner socket if it's charred or corroded. Remove the screw that attaches the socket to the range. Unscrew the wires and reconnect them to the new socket. Attach the new socket.



3 Test the switch. Unplug the range and turn on the burner. Remove the wire from the H1 terminal. Set the tester to RX-1 and place the probes on the H1 and H2 terminals. Replace the switch if the tester reading doesn't change.



4 Remove the knob and the screws that hold the old switch in place. Install the new switch and replace the screws. You may have to install one of the included adapters so your knob will fit.

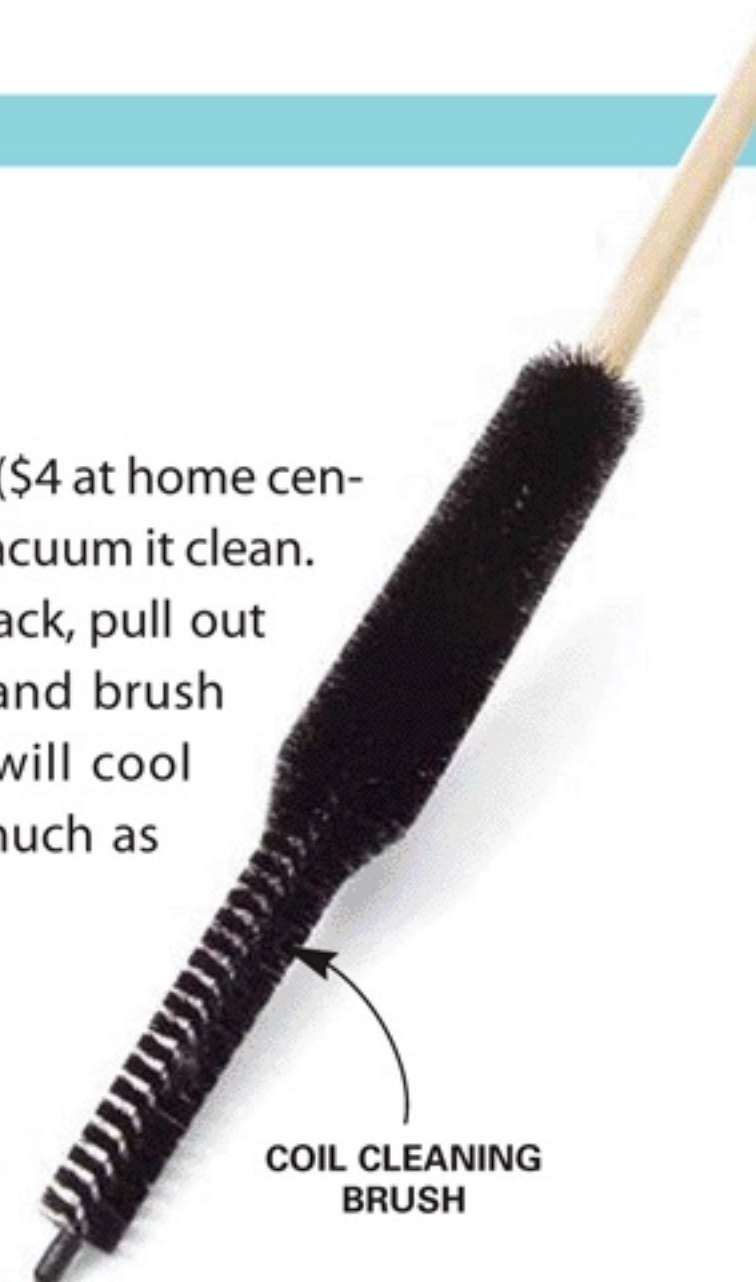
Clean your refrigerator coils

If your refrigerator conks out on a hot day and you have a cat or a dog, immediately check the coils for pet hair. Service pros find this problem on half of their refrigerator calls. The coils are the black tube-and-wire grid that cools the fluid in the compressor. A buildup of hair will cause the compressor to overheat and trigger the overload switch. On many fridges, you get to the coils by opening the grille at the bottom of the refrigerator.



tor. Then push a coil cleaning brush (\$4 at home centers) into the coils, pull it back and vacuum it clean.

If the coils are located on the back, pull out your fridge (it's often on rollers) and brush them off. Bonus: The clean coils will cool more efficiently and save you as much as \$10 a month!



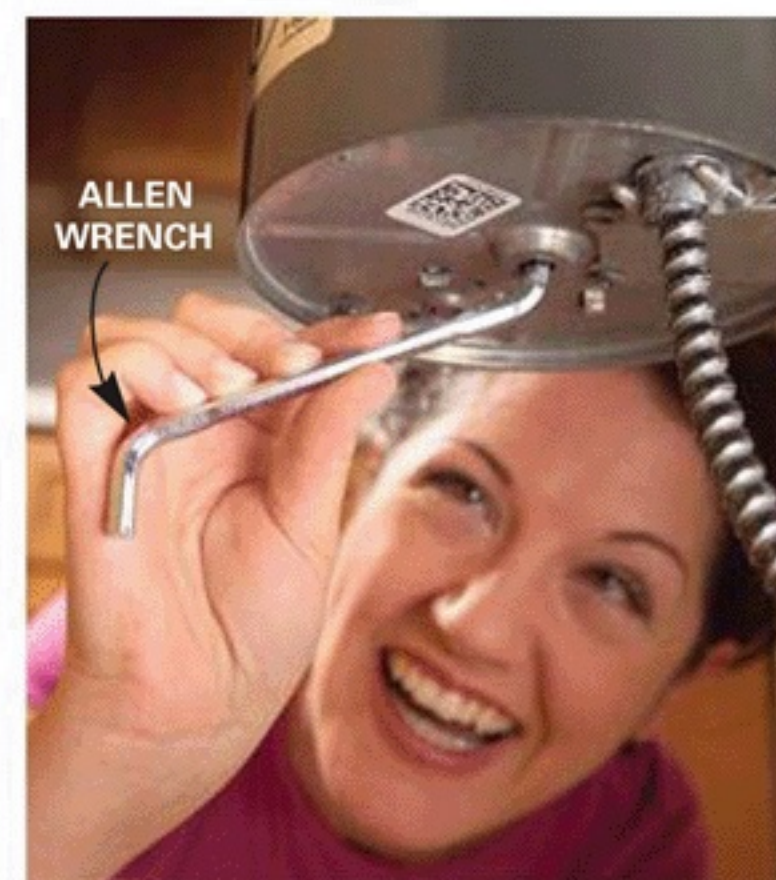
Once the overload switch is tripped, you may have to wait a few hours for it to cool. It will reset itself and turn the refrigerator back on.



Quick fix for a disposer

All disposers have an overload feature that automatically shuts off the power when the motor becomes overloaded and gets too hot. Once the motor cools, simply push the reset button on the side of or under the unit (photo left).

On the other hand, if it hums but doesn't spin, it may have something stuck in it. Switch the disposer off, then try working through it by turning the blades with a special disposer wrench (\$10 at home centers) or by turning a bottom bolt (photo above). Many disposers have an Allen wrench for that purpose, inset on the bottom of the machine.



Don't put tea bags or too many potato peels all at once into your disposer. That's a sure way to clog it.

Fix a dishwasher that isn't cleaning dishes

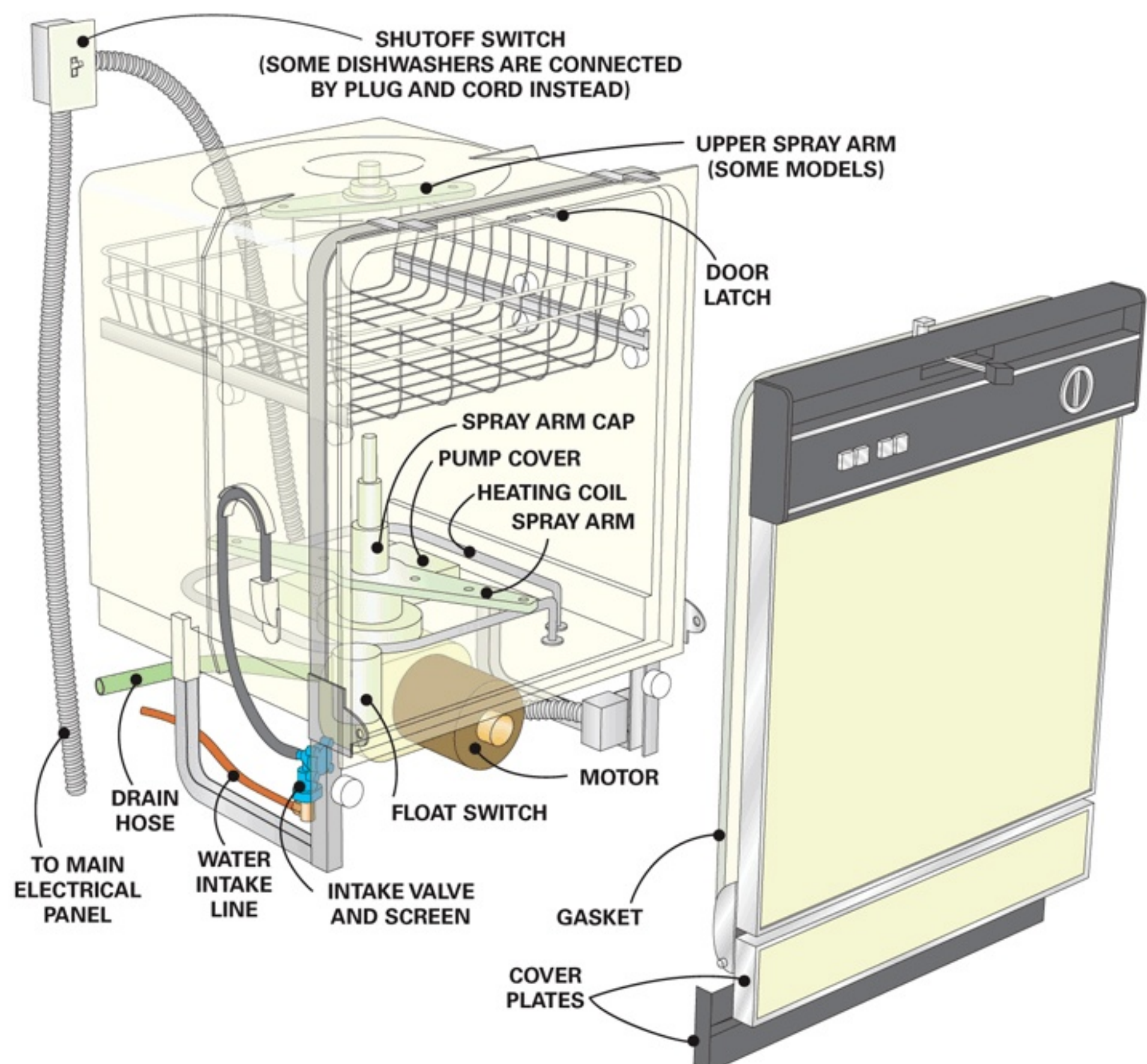


1 Remove the spray arm and clean out the holes. This also allows access to the filter for cleaning. Spray arms like the one shown here simply snap off. Others require you to unscrew a cap on top.

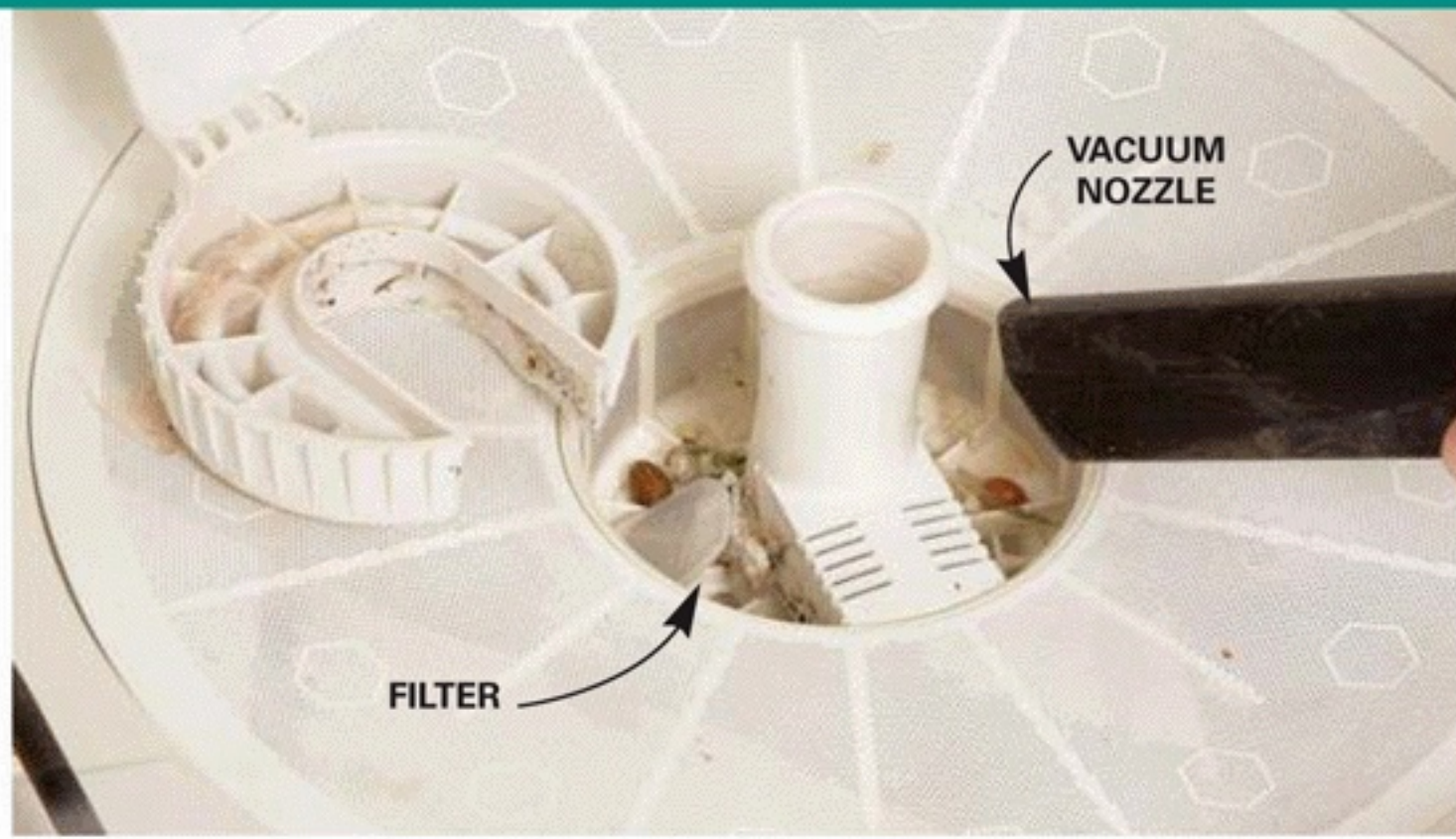
If your dishwasher is running but the dishes aren't getting clean, one of these simple fixes could solve your problem. Start by consulting your manual to be sure you're using the right detergent, loading the dishes correctly and maintaining the right hot water temperature. Then follow Photos 1 – 5 for repair steps.

Insufficient water in the dishwasher also can cause poor cleaning. If the float gets stuck in the raised position, the dishwasher won't fill with water (Photo 3). Another likely cause is a clogged inlet screen or faulty inlet valve. Photos 4 and 5 show how to clean the screen or replace the valve. To determine if your dishwasher is getting enough water, start a wash cycle. Open the door when you hear the machine stop filling. The water should reach or come close to the heating coil. If it doesn't, first make sure the float is operating freely (Photo 3). If this doesn't solve the problem, check the inlet valve and screen.

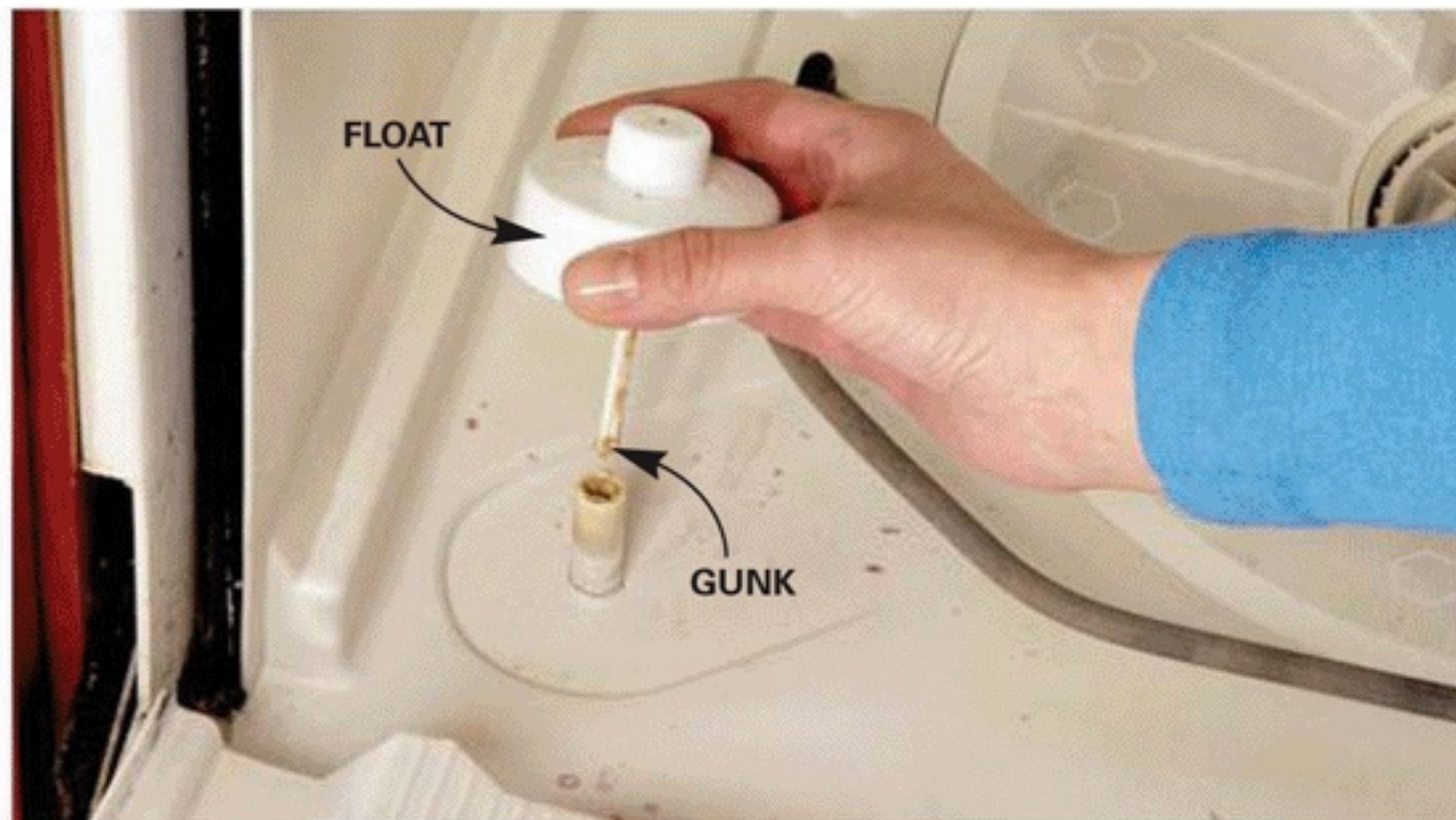
Figure A: Anatomy of a dishwasher



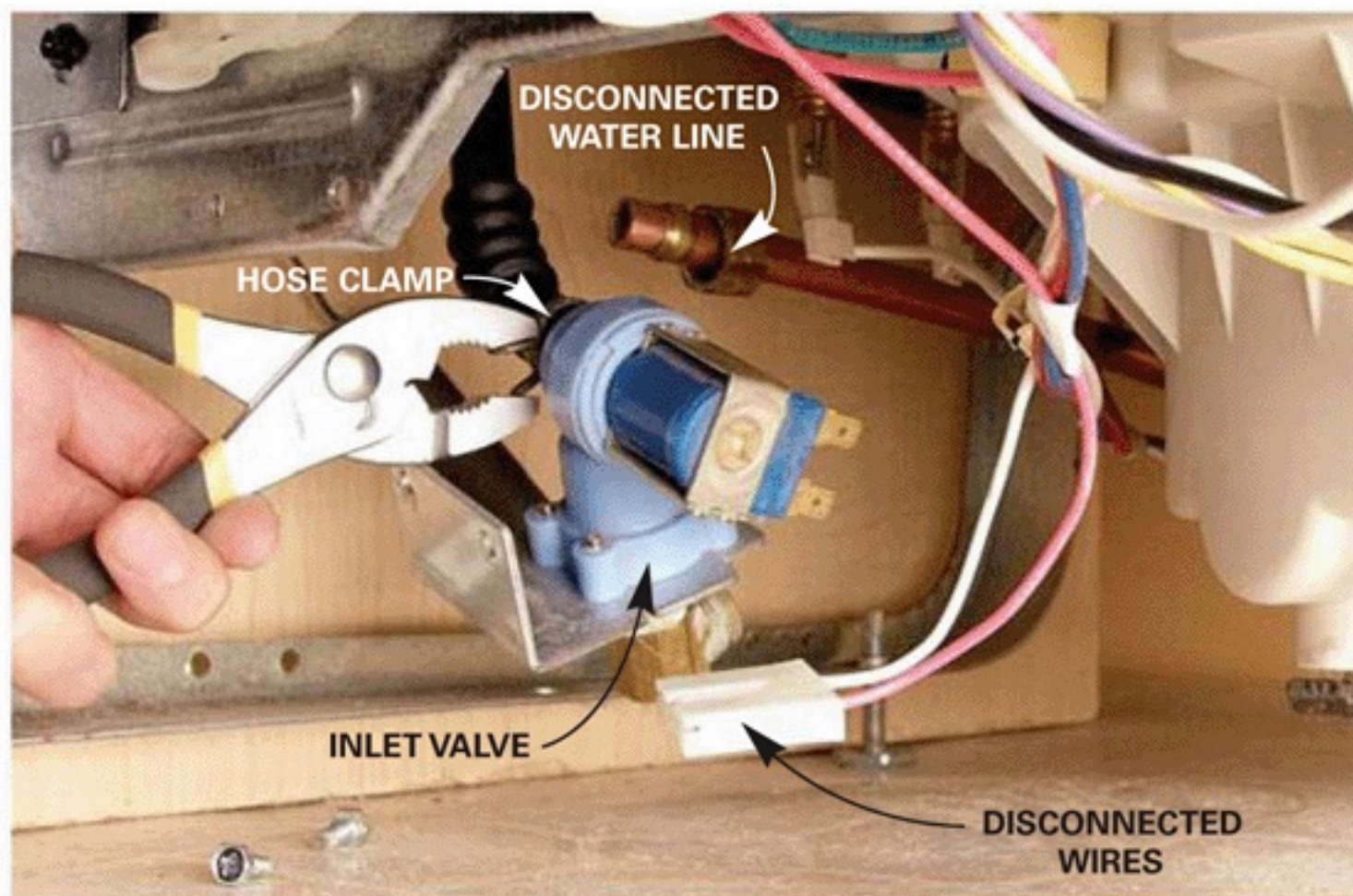
2 Clean the filter. Remove the filter screen if possible. Otherwise, use a wet/dry vacuum to suck out the debris.



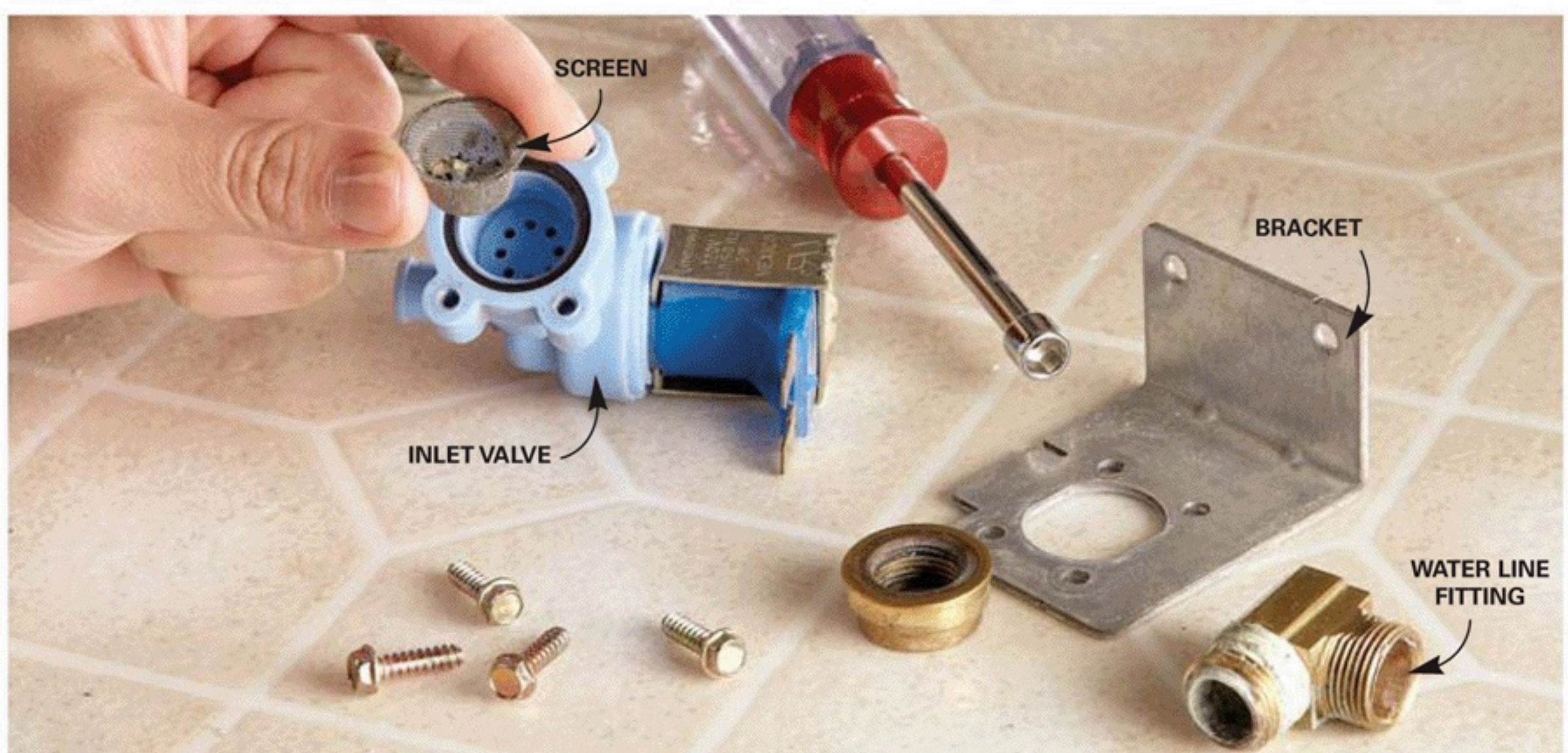
3 Make sure the float moves up and down freely. If the float on your dishwasher is removable, take the float apart and clean it.



4 Remove the inlet valve to clean the screen or replace the valve. Unscrew the nut that connects the water line and remove the water line. Remove the screws that connect the valve bracket to the dishwasher frame and lower the valve. Pinch the hose clamp to remove the rubber hose. Unplug the wires.



5 Check to see if the screen is plugged. Unscrew the water line fitting from the valve. Then unscrew the four screws that connect the valve to the bracket.



Replace the inlet valve

Inlet valves that are starting to fail sometimes make a hammering noise. If you hear this, replace the valve. But before you start any work on the dishwasher, unplug it or turn off the power at the shutoff switch or main circuit panel. Test to see if the power is off by turning on the dishwasher and making sure it doesn't run. You'll also have to shut off the water before removing the inlet switch. Usually you'll find a shutoff valve under the kitchen sink or in the basement or crawl space under the dishwasher. Otherwise, close the main water valve.

Photo 4 shows how to remove the inlet valve. Yours may look different. Whether you're replacing the valve or simply cleaning the screen, you'll have to unscrew the brass fitting that connects the water line to the valve. Remove the four screws that secure the valve to the bracket to access the filter screen (Photo 5). Reassemble and reinstall the valve in the reverse order. Wrap Teflon tape around the fitting threads before screwing the fitting into the valve.

Tips for fixing floor, door & stair squeaks

Eliminate floor squeaks

WOOD FLOOR SQUEAK

LOOSE FLOORING
RUBS AGAINST
FLOORING NAIL

HARDWOOD
FLOORING

GAP
UNDER
FLOORING

JOIST

FLOOR SHEATHING SQUEAK

LOOSE SHEATHING
RUBS AGAINST
SHEATHING NAIL

GAP UNDER
FLOOR
SHEATHING

Typically, floor squeaks occur when wood elements move and rub against nails (thus the squeaks). The solution is to use screws to tightly pull together the wood pieces (no squeaks). It's tougher if you can't get at the floor from below.

The strategy: Locate the squeak, find the nearest joist, and tighten the flooring to the joist or subfloor with a trim-head screw driven through the floor.

Step one: Locating the squeak and the joists

Walk back and forth across the floor and do some detective work to find the spot that's squeaking. Kneel down near the squeak and have another person walk across the floor. Use a piece of masking tape to mark its probable location. Next, locate the joist nearest to your mark.

■ If there are floor heating registers, pull the register out and probe along the edge of the metal ductwork. Usually these floor registers are installed next to a joist.

■ Probe through the carpet and subfloor using a finish nail as a drill bit; it won't grab the carpet fibers like a twist bit.

■ Sometimes the joint between plank flooring pieces is wide enough for a 1/16-in. twist drill bit to squeeze through. Drill through the subfloor along this joint and probe with the bit to locate the joist.

■ Once you find a joist, it's a good bet that the rest are spaced 16 in. on center (although sometimes 19-1/4 in. or 24 in. on center). Lay a tape measure out from the known joist to locate the others.

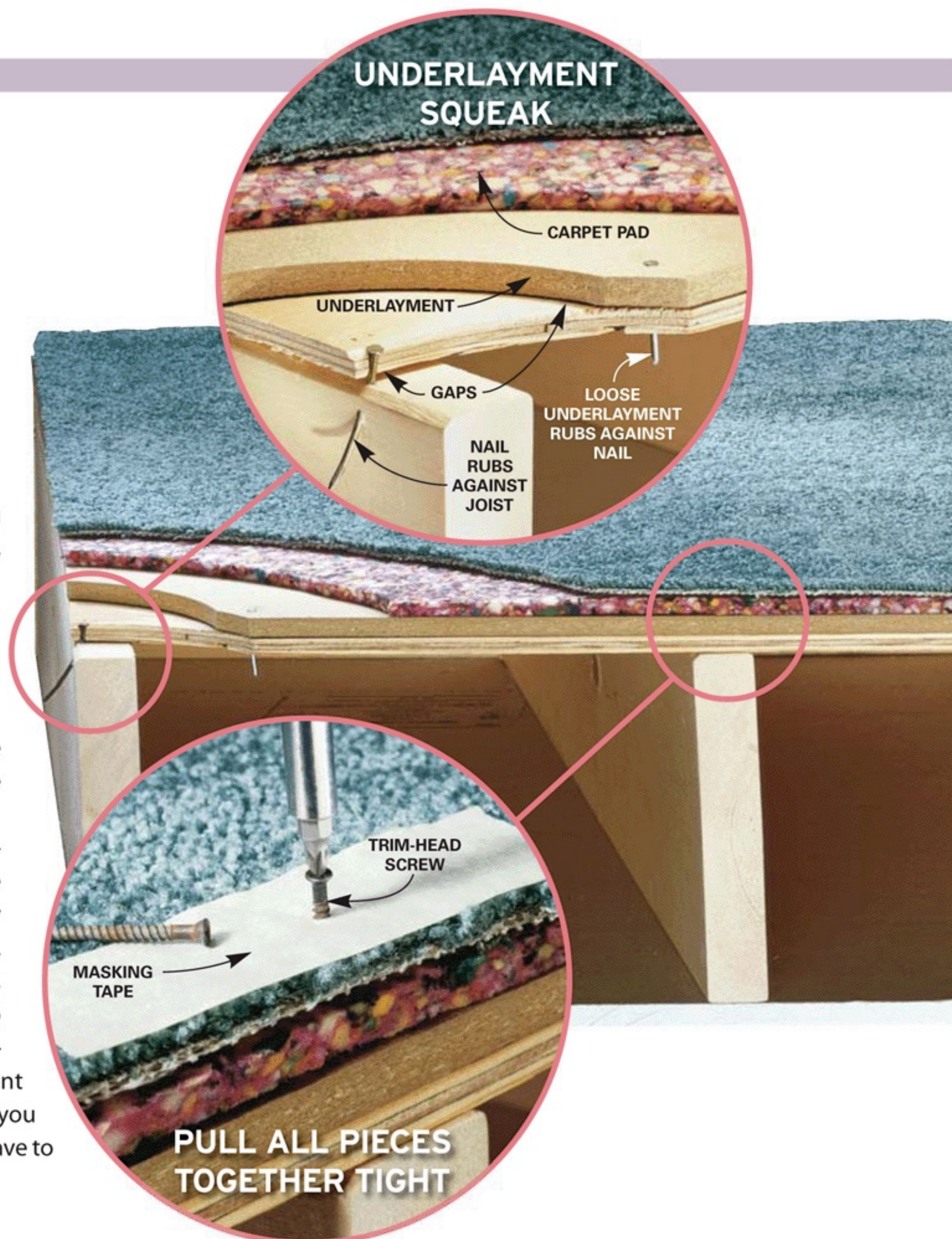


If you're going nuts listening to numerous squeaks under carpeting, roll back the carpet and pad, locate the joists and screw off the whole floor. The silent relief may be well worth the \$100 to have the carpet re-stretched.

Step two: Eliminate the squeak

Drive a trim-head screw through the flooring and into the joist. If you're working on carpet, then drive it right through. Go slowly so that carpet fibers won't grab and wind onto the screw threads. On hardwood, first drill a clearance hole through the hardwood plank, followed by a 1/8-in. deep counter-sunk hole the size of the screw head. Drive the trim screw tight and then putty the screw hole.

If the squeak's gone, mission accomplished. If not, drive another screw into the joist several inches away. Still squeaks? Try another spot off to the side of the joist. Because you're literally working in the dark, this is a real hit-or-miss process. If you're up to three or four attempts and you're still not victorious, sit back and reassess how important this "squeak mission" is to you—especially if you have a hardwood floor. Sometimes you just have to live with it.



Silence a squealing hinge

If you've got a door hinge that squeals, this is a fix for you. A little petroleum jelly will rid the hinge of that annoying wail. The petroleum jelly works its way into the hinge and adheres well, so it won't run off and make a mess like oil or other lubricants.

Photos 1 and 2 show how to punch out a hinge pin and grease it up. After all the hinges have been lubricated, open and close the door a few times to work the petroleum jelly into the hinge joints.



1 Loosen each hinge pin by tapping an 8d nail up from underneath. Once the pin is loose, pull it out (lift up on the door handle to relieve pressure if the pin binds). Keep the door closed and work on only one hinge at a time.



2 Lightly coat the hinge pin with petroleum jelly and dab a little in the top of the pin slot. Reinsert the pin and wipe off any excess.

Stop stair squeaks completely



Squeaky stairs are easy to fix from underneath—provided they're exposed. A simple fix is to tap shims into voids between the treads and the stringers and add some glue. Then screw the stringer to each stud. But most stairs are finished on the underside with drywall or plaster. Squeaks in these stairs need to be fixed from the top. That's why the perfect time to fix

them is when you're replacing the carpeting—you can remove the treads and get at the squeaky culprits. (If you're not replacing the carpet, but you have a squeak that's driving you nuts, see p. 51 for how to fix tread squeaks right through the carpeting.) Here are four easy steps to permanently fix the treads that squeak and keep the rest from ever starting.



1 Pry off each tread with a flat bar. Remove the nails and clean off any carpet pad or staples.



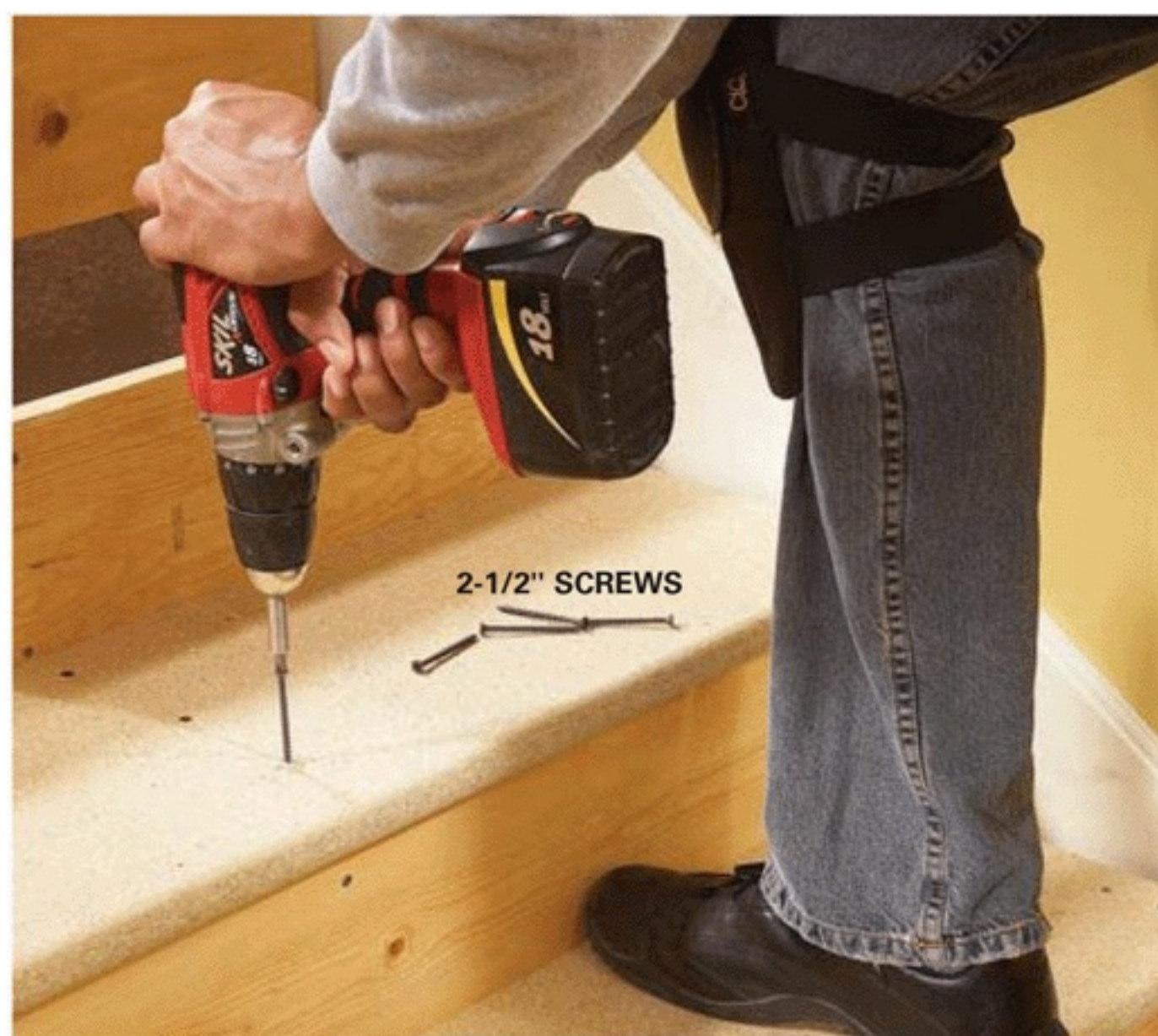
2 Apply a bead of subfloor adhesive along the top of the riser, the stringers and the back of the tread. Press the tread back into place.



Fix squeaks through carpet

If you have carpeted stairs and a squeaky step that's driving you crazy, try the Squeeeeeek No More kit (\$20; 123itsdone.com; 800-459-8428). The kit is designed to send a snap-off screw right through the carpet without damaging the fibers. Find the squeak by bouncing up and down on each step, then drive the specially scored screw through the middle of the depth control jig, down through the carpeted tread, and into the stringer or riser nearest the squeak. The jig stops the screw head right below the tread's surface. Use the screw gripper located on one side of the jig to rock the screw back and forth until the excess length snaps off.

After you've removed the carpet, use a flat bar to pry off the treads, working from the top down (Photo 1). Since you'll be reusing the treads, remove the nails and any leftover carpet pad and staples. Screw the outside stringers to each stud with 4-1/2-in. screws (Photo 2). Starting with the bottom tread, apply a bead of subfloor adhesive (two brands are PL 400 and Liquid Nails)



3 Drive three 2-1/2-in. screws through the top of the tread into each stringer.

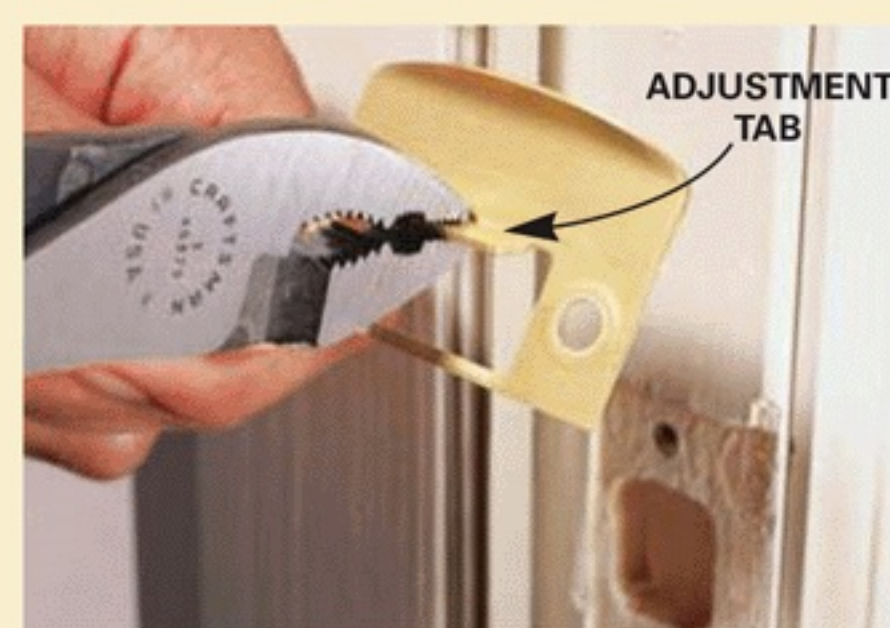
along the top of the riser, the stringers and the back of the tread, and press the tread back into place. Next, drive three 2-1/2-in. screws through the top of the same tread into each stringer (Photo 3). Then, drive a 2-in. screw through the riser into the back of the tread between the stringers (Photo 4). Repeat these steps with each tread, working your way to the top of the stairs.



4 Drive a 2-in. screw through the riser into the back of the tread.

Tighten a rattling door

A loose, rattling door can be nerve-racking. Most strike plates have an adjustment tab to solve that problem. Unscrew the strike plate from the door. Bend the small tab toward the latch bolt opening. If the door continues to rattle, you might have to remove the plate and bend the tab several times to get it just right. If the door latch doesn't catch when you close the door, bend it back until the door latches tightly.



Adjust a sticking bifold door



Are you frustrated with a bifold door that doesn't close smoothly, or never opens without sticking, scraping or binding? Chances are it's out of alignment in the door frame. The fix is usually simple and often takes less than 10 minutes.

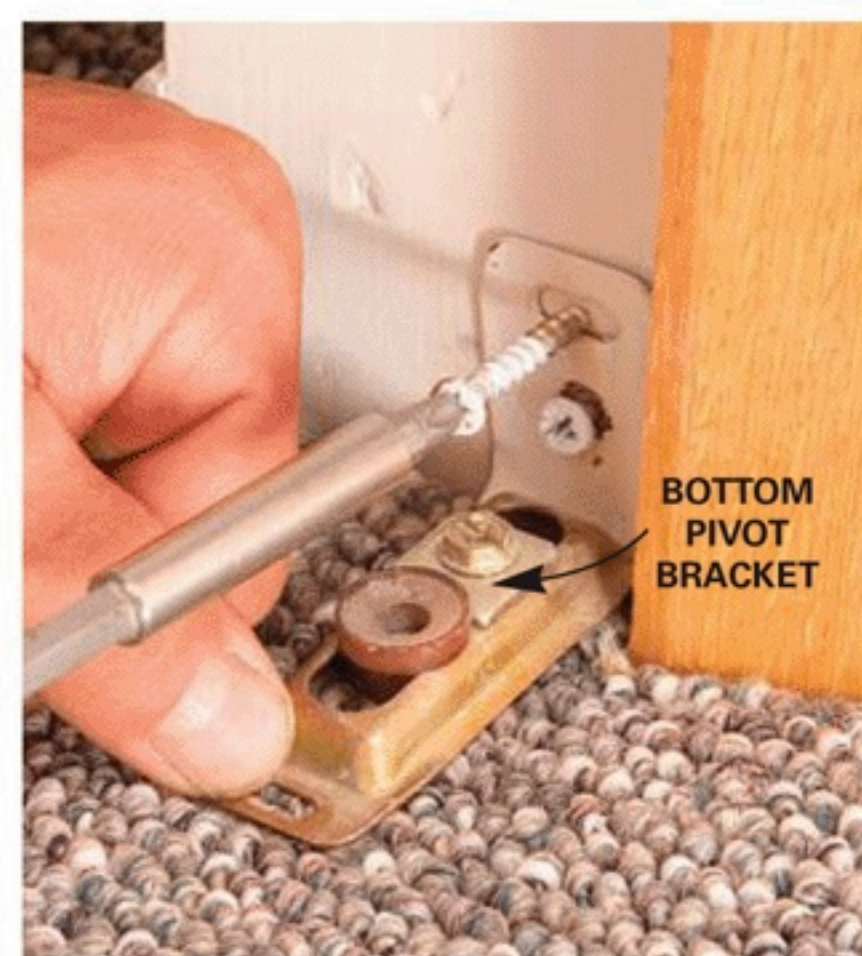
First close the door and look along the edge of the door as it lines up with the frame (photo at left). The door edge and frame should line up nice and parallel. Even if it's off by only 1/4 in., the door will probably bind. Most often the problem is a loosened top pivot and bracket, which allowed the door to slip sideways out of alignment (Photo 1). Open the door and then loosen the setscrew for the top bracket slightly with a screwdriver. Then close it again. Push or pull the top of the closed door to align its edge parallel to the frame. Close the door to check for smooth operation and to see how the doors meet. Open the door gently so the pivot doesn't slip, then tighten the setscrew. You may have to repeat these steps a few times with both doors to get the "perfect" result.

If the door binds against the lower part of the frame, check the bottom pivot and bracket next. (Look for a worn edge on the door and scrape marks on the door frame.) The bottom pivot often loosens and slips. Either raise the door slightly to shift the pivot in or out, or loosen the setscrew and shift the bracket seat (Photo 2), depending on the type of hardware you have. Sometimes the entire bracket comes loose because the mounting screws are stripped, broken or missing. You'll need to remove the door to fix these. Test the door for smooth, non-binding operation by opening and closing it several times. You may have to readjust the top pivot bracket to make the door parallel to the frame again.

The top roller guide rarely needs attention, but make sure that it runs smoothly in the track. Apply a light coating of wax or silicone spray to eliminate any sticking.



1 Loosen the top pivot bracket setscrew with a screwdriver. Slide the bracket in the track until the door is parallel to the jamb. Tighten the setscrew firmly.



2 Tighten a loose bottom bracket with 1-1/2-in. screws driven through the drywall into the framing. Avoid screwing through the carpeting if possible.

Simple car repair & maintenance

Replace your bent antenna

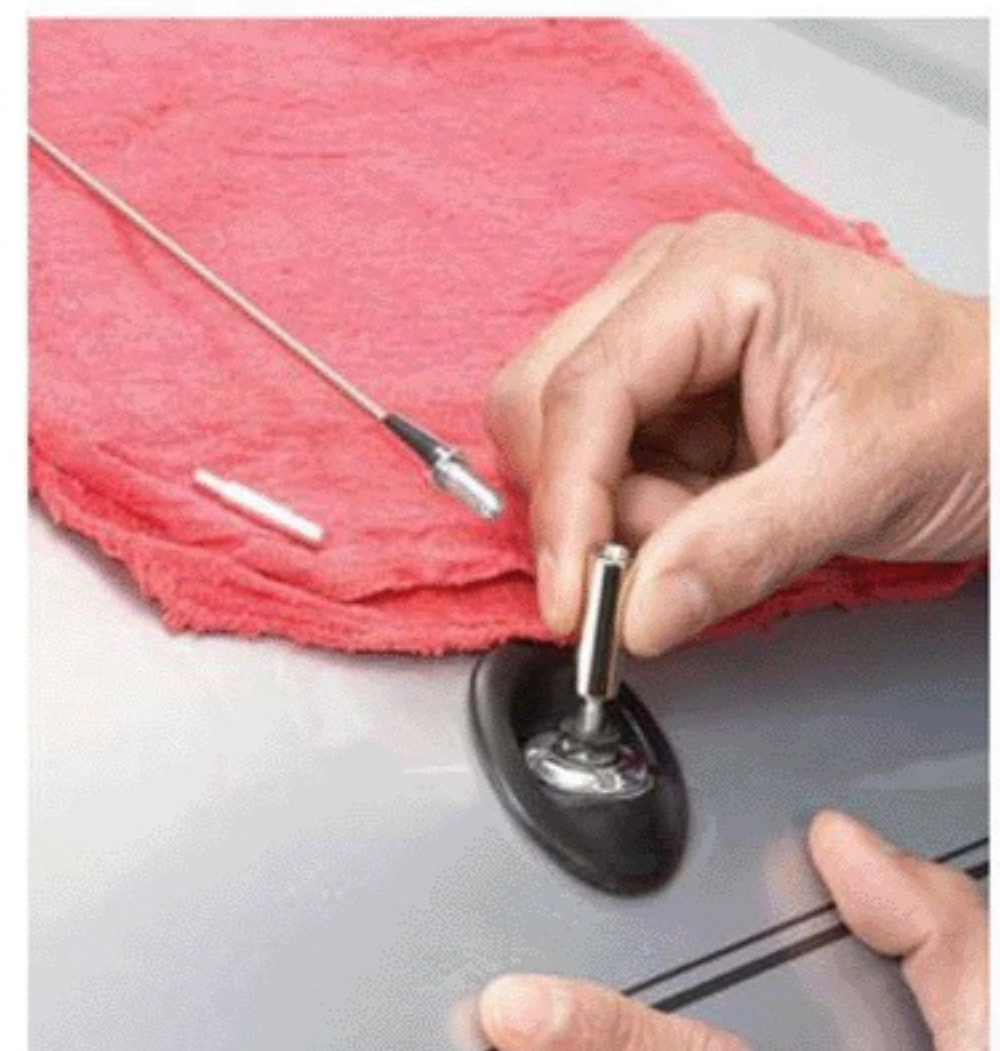
Need to fix a bent or broken antenna? The two most common styles are “pillar mounts,” which slide in and out of the top of door pillars, and “fixed masts,” nonretractable ones that are mounted on fenders. Both styles are very easy to fix yourself. Start the repair by buying a replacement unit (less than \$20) from an auto parts store or online at antennamastsRus.com.

New pillar-mount antennas come with the coaxial cables already attached. So after you unscrew and pull out the old unit, cut the old cable and use it to fish the new cable through the pillar to the radio. (Splicing the old cable to the new one isn't recommended; you may get radio interference.) But be careful! If the splice comes apart inside the pillar, you'll have to remove the pillar trim to fish the new cable. Form a hook in the old cable, loop a picture-hanging wire through it and then wrap it with tape for added insurance. You'll have to remove the car radio to hook up the new cable. For about \$5, you can buy removal instructions from carstereoremoval.com.

Fixed-mast antennas are much easier to replace. Buy a universal kit (\$15) from any auto parts store. Just unscrew the bent mast with an adjustable wrench and install the new mast. You may have to install an adapter (included in the kit) to match the thread size.



1 Pillar mount
Fish the new cable through the door pillar by using the old one to pull it through. Securely splice together the new cable to the old one.



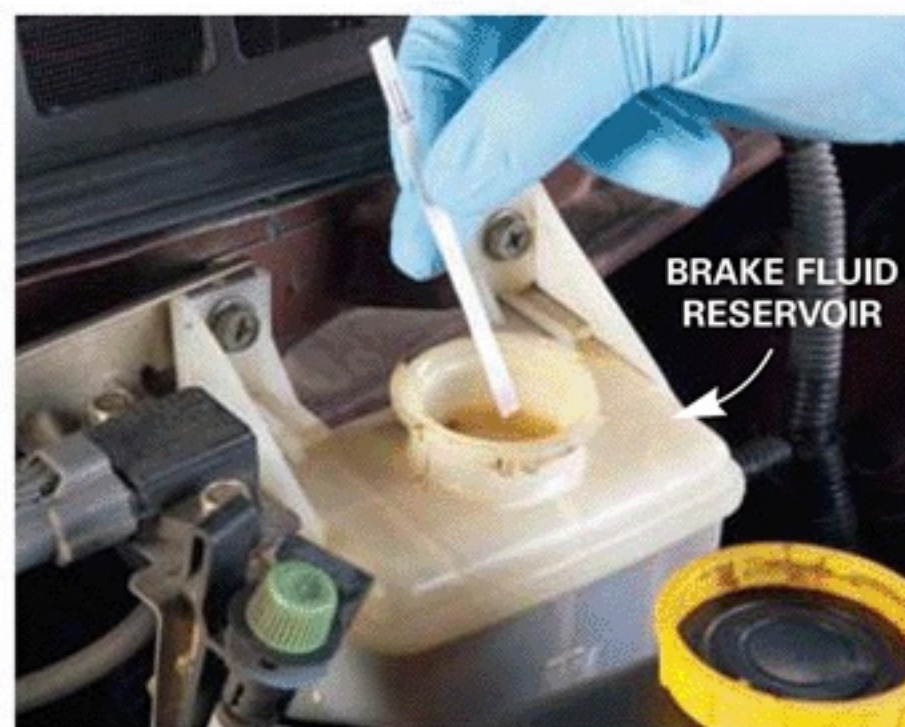
2 Fixed mast
Replace the old base stud with the matching one from the kit. Then screw in the new mast.

Check your brake fluid condition

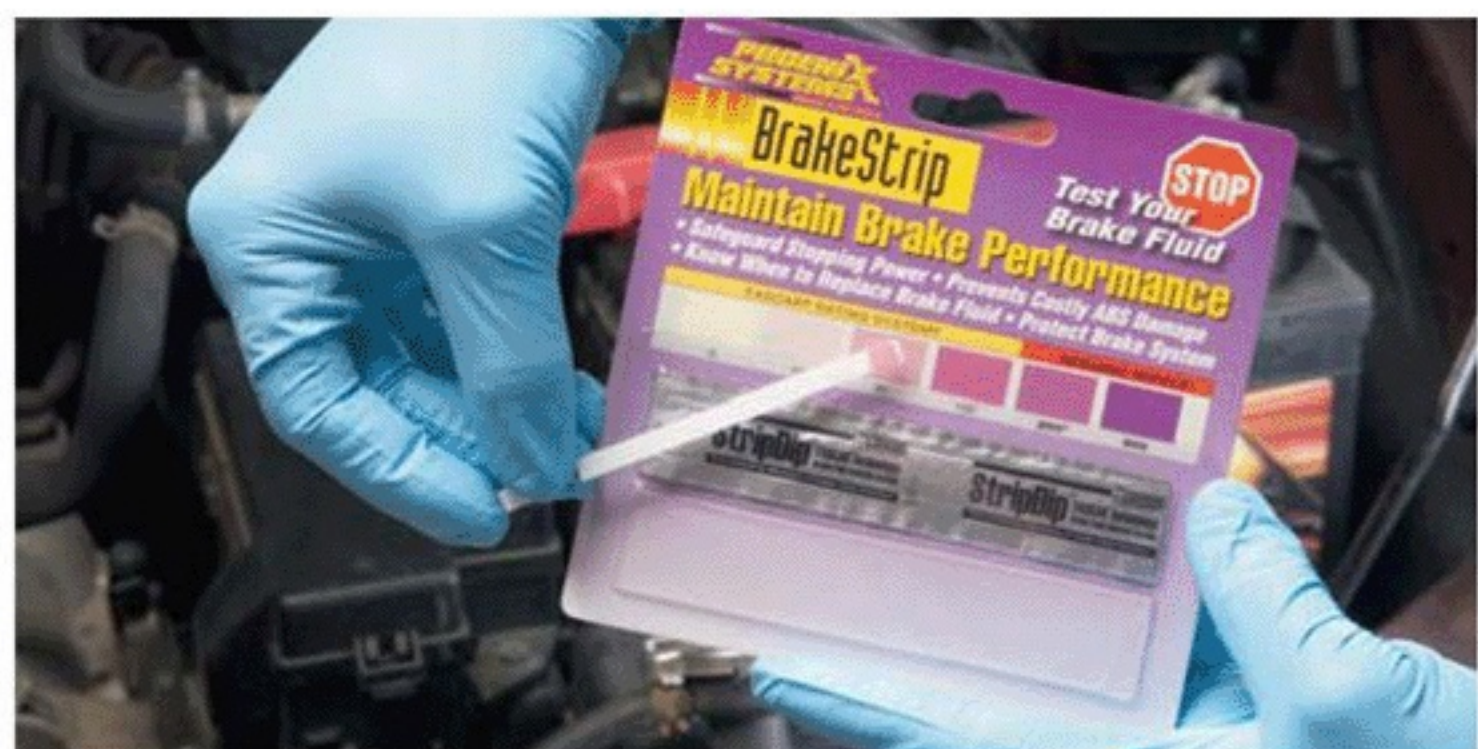
As with every other fluid in your car, brake fluid contains a main ingredient along with protective additives. The main ingredient in brake fluid doesn't degrade, but the additives do. The most important additive is a corrosion inhibitor. The corrosion inhibitor prevents internal rusting of steel brake lines, calipers and ABS (antilock brake system) components. Once the inhibitors are exhausted, even minute amounts of moisture can cause dangerous and costly corrosion.

Most car manufacturers recommend a complete brake fluid flush every two years or 24,000 miles. Rather than rely on a general recommendation, you can test the actual condition of your brake fluid using a test strip. A package of two BrakeStrip test strips costs \$10 at brakebleeder.com.

Remove the cover of the master cylinder and dip a strip into the fluid. Shake off the excess fluid and wait 60 seconds before comparing the color of the strip with the guide on the package. The guide tells you when it's time to change the fluid.



1 Dip the test strip into the brake fluid reservoir and wait for it to change color.



2 Compare the test strip with the color chart to determine the condition of the fluid. Replace your brake fluid if the color of the strip falls in the "required service" category.

Repair and maintain weather stripping

During the winter, water can freeze around the door's weather strip, locking you out of your car. If you pull hard to break the ice, the weather strip can tear right off the door. Here's how to fix the weather strip and prevent it from tearing again.

Buy a tube of weather-strip adhesive, a can of nonflammable spray brake cleaner and a can of spray silicone (all are available at any auto parts store). Then pull the weather strip away from the door and clean it and the metal surface with the brake cleaner. Let that dry completely, then squeeze a bead of the adhesive onto the weather strip and the door and let that dry. Then apply a second coat to both surfaces and press the weather strip into place. Clean up any adhesive messes with the brake cleaner.

Hold it in place with masking tape until the adhesive dries (about 45 minutes). Then pull the tape free and spray silicone on the weather strip on the other doors and trunk lid. That will prevent ice from sticking to them. It's good preventive maintenance to treat all the weather stripping before winter every year.

3M Super Weatherstrip & Gasket Adhesive, No. 051135. \$3.



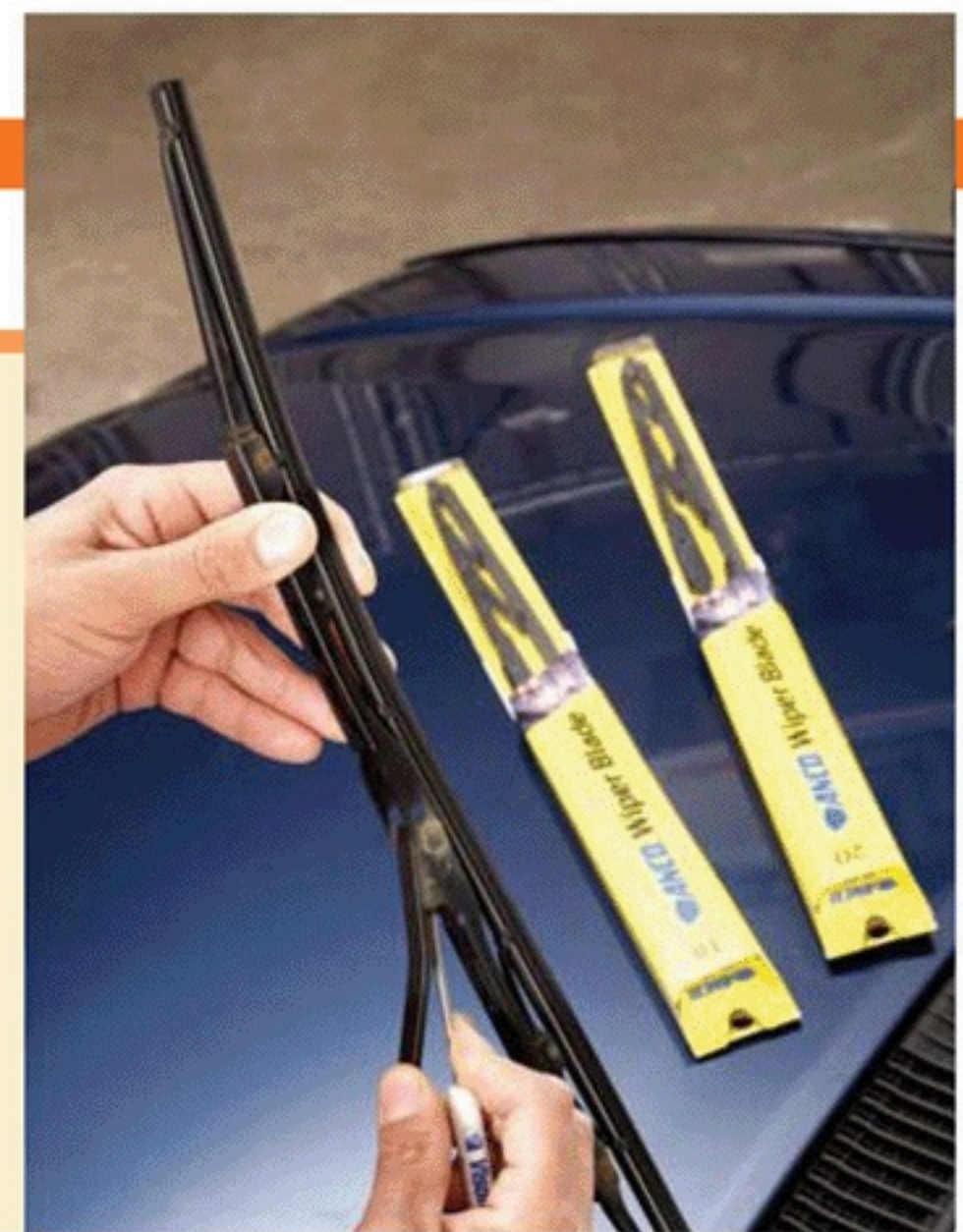
1 Apply adhesive to the back of the weather strip and the channel.

2 Prevent door sticking with silicone spray. Move in close to cut down on overspray.

Replace the wiper blades

It's easy to tell when your blades need replacing. Simply press the washer button and see if your blades wipe clean. If they streak, they're toast. The auto parts store will have lots of economy blades, but go with a name brand instead (ANCO, Trico or Bosch). They cost more than economy blades, but their higher-quality rubber wipes better, has better UV protection and lasts longer.

Follow the installation instructions on the package. Be sure you have a firm grip on the wiper arm once you remove the old blade. If it gets away from you, it can hit the windshield with enough force to crack it.



Fix a leaking sunroof

Usually a leaking sunroof is caused by a drain tube that's clogged with debris. Then the water can't drain and it overflows into the vehicle. Fixing it is a simple DIY repair that you can do in about 20 minutes.

Open your sunroof and look for the drain holes in both front corners. Those tubes run through the door pillars and drain through to the rocker panels. You may be tempted to run a coat hanger down the tubes or blast them with compressed air. Don't! You might poke the wire right through the tubing or disconnect it from the drain hole. Then you'd have to remove the entire headliner to reconnect it—a big job. Instead, use a shop vacuum and small-diameter vinyl tubing to suck out the clog (Photo 1).

If that doesn't do the trick, try running a very small flexible "plumbing" snake down the tube to break up the clog. (Actually, it's a speedometer cable found at any auto parts store for about \$8.)

If cleaning the tubes doesn't work, don't try to disassemble the mechanism or bend the sheet metal to get a better fit. That's a job for a top-notch body shop. If the car isn't worth the cost of the repair, then go for the silicone and caulk the sunroof (but you won't be able to open it again, of course!).



1 Make a hose reducer with ordinary PVC plumbing parts and attach a vinyl hose to the end. Then vacuum the crud out of the water channel and the drain tube.



2 Snake out a really stubborn clog with a speedometer cable. Twist the cable as you feed it down the tube.

11 best 10-minute DIY fixes

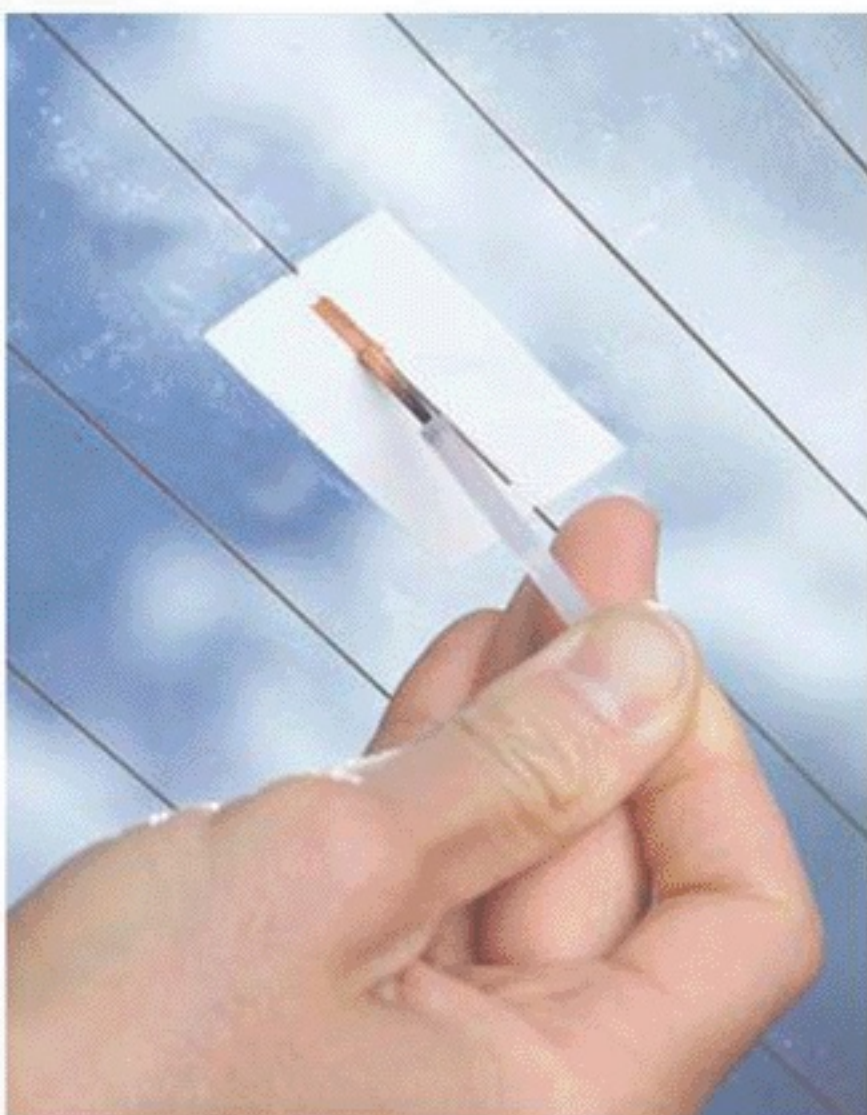


1. Cloudy headlight lenses. You don't have to replace cloudy headlights. Buy a headlight restoration kit at any auto parts store and follow the sanding and buffing instructions.

2. Sticking or slow power windows. Give each window channel a shot of dry Teflon or silicone spray lubricant. Then run the window up and down a few times to spread the lubricant.

3. Avoid iced-up wipers. Install winter wiper blades. They're covered by a rubber boot that prevents ice from building up in the wiper and provides streak-free wiping.

4. Is your defroster grid out of action? Pick up a Permatex Quick Grid repair kit (\$13) at any auto parts store. Follow the instructions and you'll be defrosting in no time.

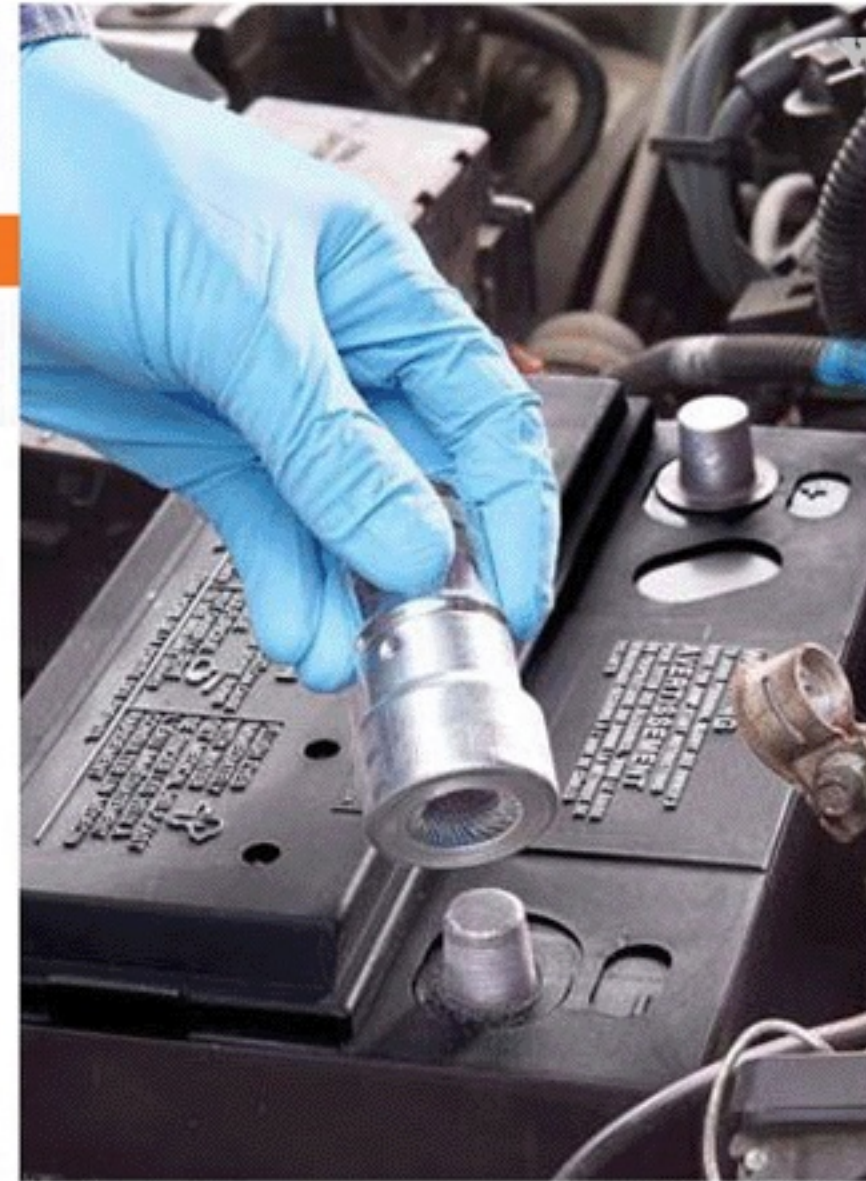


5. Clogged radiator fins. Disconnect the electrical connectors to your electric cooling fans and remove the fasteners. Lift out the entire fan assembly. Then use a garden hose and nozzle to spray the back of the radiator. That will dislodge the gunk stuck to the front side and provide better cooling. Reinstall the fan assembly.

6. Squeaky door hinges. Rusty hinges wear faster, causing the door to sag and not close properly. Replacing the hinges can be costly. A quick spray of white lithium grease is all you need to keep them from wearing out.

7. Change your air filter. Your engine sucks 14 million gallons of air through the air filter every year. If it can't get enough air, the combustion efficiency will drop by at least 10 percent. Air filters are cheap (less than \$15) and you can replace them yourself. Replace the filter at least every 10,000 miles or once a year, and even with that expense, still save \$270 each year.

8. Fix paint chips and scratches right away. Use precise applicator tools and a can of touch-up paint to prevent rust.



9. Corroded battery terminals. Corrosion puts added strain on your charging system and can mess with computer-controlled systems. Cleaning is your cheapest insurance against electrical problems.

10. Rattling exhaust pipe. Replace exhaust clamps and brackets at the first sign of rust-through or rattling. They're cheap and easy to install, and they protect other exhaust components from vibration damage.

11. Prevent false ABS trouble codes. Anti-lock brake sensors contain a magnet that can pick up metallic road debris and set off a false "trouble code." Use a rag to wipe the debris off the sensor any time you have your wheels off.

Best avoidable "oopses"

Mixing different types of coolant. Green, yellow, red, orange and blue coolants create cool "mud" when mixed. Cost of a new heater core: \$400 to \$1,000.

Putting E-85 in a "non-flex-fuel" car. This little mistake will cost you the price of a tow, a fuel tank and fuel line flush, a new fuel filter and a new tank of gas. Expect to pay about \$400 for this "oops."

Tips for slashing insurance costs

Cut your home insurance bill

Your insurance company determines the cost of your annual premium by calculating your chances of having a loss and how much it'll have to pay if you make a claim. Using these tips, you can make your home a better risk and reduce

your premiums by 10 to 45 percent. How much you can save depends on where you live, your insurance company's rate structure and risk philosophy, your individual policy and your insurer's list of available discounts.

Get a list of discounts

Insurance companies offer discounts to homeowners for improvements that make their homes a better risk. These include safety features such as indoor sprinklers, smoke detectors and dead bolt locks. Discount programs change frequently. If you haven't spoken to your agent within the past year or you've made a major home improvement, you may be missing out on significant discounts.

Choose fire-resistant siding

If you're installing new siding, install Class A rated fire-resistant materials such as metal, fiber-cement shingles and clapboards, and masonry. Using these materials can reduce your premium by up to 20 percent, especially in dry areas of the country that are more susceptible to fire damage.

Situations that raise rates

- A swimming pool (especially with a diving board), a hot tub or a trampoline.
- A dangerous condition on your property (like cracked steps or a low spot that collects water or ice) that could injure someone. If the injured party files a claim with his or her insurance company, your rates will rise.
- Having a pit bull, Rottweiler, Doberman Pinscher or wolf mix. These breeds affect your insurance rates because dog bites cost insurers about \$310 million annually.



Jupiter Images

Increase your deductible

Raising your deductible—the portion of a claim that comes out of your pocket—is the easiest way to cut your insurance cost. Bumping your deductible from \$500 to \$1,000 can save you up to 25 percent on your premium. Raising it to \$2,500 can save you 30 percent, and raising it to \$5,000 can save you 35 percent or more. The downside, of course, is that you'll be stuck with a bigger bill if you file a claim. But consider this: If you raise your deductible from \$500 to \$2,500 and your premium decreases by \$500 a year, your savings will cover the deductible increase in four years. If you put those savings aside, you'll have a cash cushion to pay the higher deductible. And after the first four years, you'll save \$500 every year without any extra financial risk. DIYers can often offset the impact of a higher deductible by doing part of a repair project themselves.

TIPS FOR SLASHING INSURANCE COSTS

Drop additional structures coverage

Most insurers assume your house isn't the only building on your property. If you don't have a stand-alone shed, garage or other structure on your property, remove this coverage and save yourself 5 percent.

Fasten shingles securely

If you're planning to get new asphalt shingles and you live in a high-wind zone, check with your agent first. You may get a discount simply by using six nails or staples per shingle instead of four, which increases the wind-resistance rating of your roof. Make sure you or your contractor fills out the correct paperwork, and then send it to your insurer.

Think twice before filing a claim

Every time you file a claim, you risk higher insurance rates in the future. So in the long run, filing a claim can cost you more than you receive in a payout. Paying for a smaller loss yourself will almost always cost less than the premium increase you'll face later. A good rule of thumb is don't file a claim if it's worth less than \$1,000 over your deductible. Statistically, if you file two claims in a three-year period, or make claims related to maintenance issues such as a chronic leak or some missing shingles, you risk triggering a rate hike or worse. Your insurance company may even drop you completely. Just inquiring about a claim (without even filing it!) could raise your rates.

Shop around every five years

If you've had the same insurer for more than five years, it's worth getting quotes from three different insurers to compare prices and coverage. Many insurers offer a "longevity" discount of about 5 percent if you've been with the company for three to five years, and 10 percent for six years or more. Make sure you're getting this longevity discount, and take it into account when you compare prices.

Replace washer hoses

Washing machine hoses that leak or even burst are a common cause of water damage. Some insurance companies offer a discount of up to 10 percent on your premiums if you replace the rubber hoses on your washing machine with no-burst stainless steel hoses (\$20 a pair at home centers and hardware stores). In 10 minutes, you could save five times

the cost of the hoses on your next bill, but this is a smart move even if your insurer doesn't offer a discount.

Shorter no-burst hoses for toilets and faucets cost \$6 each.



Monitor your credit score

Your credit score has a huge impact on your insurance costs. A poor credit score could increase your insurance premium by 35 to 40 percent or possibly result in the cancellation of your policy. On the other hand, if your credit score has improved since your policy was issued, have your agent refigure your premium based on your improved credit rating. Ask your insurer when it last updated your credit score records and monitor your credit report each year by getting a free copy from the top three credit reporting companies at annualcreditreport.com, or call (877) 322-8228 and request your free credit report.



Metal hurricane shutters are easy to install on existing homes. Electrically controlled models are also available.

Install storm shutters

If you live in a hurricane-prone area, installing wind-resistant shutters can save you up to 30 percent on the hurricane portion of your premium (often about 60 percent of the total premium in coastal areas), which means an overall savings of almost 20 percent. For an average home, basic metal shutters start at about \$700. If your wind premium is \$1,000, the shutters would pay for themselves in three to five years. To find storm shutters, go online and search "storm shutters" or "hurricane shutters."

Choose a tough roof

Standard asphalt shingles take a beating during wind and hail storms. So insurance companies offer big discounts (up to 45 percent) for tougher materials. Before you choose a new roof, talk to your agent to learn about the exact discounts for materials other than standard asphalt. In most cases, metal roofing gives you the largest discount, but it also costs two to four times as much as standard asphalt shingles. For a less expensive roof that still qualifies for a discount, consider heavier-grade Class 4 modified asphalt and shake shingles, which come with a 30- to 50-year limited warranty and may be less expensive than replacing a storm-damaged roof.



CertainTeed Corp.

If you live in a hurricane-prone area, wind-resistant roofing materials with a higher wind rating can lower your premium.

Install trouble detectors

Some companies will discount your premium 2 to 5 percent if you have safeguards in place to warn of plumbing failures. Battery-operated or plug-in temperature sensors (\$20 to \$60 depending on the type) detect furnace breakdowns and the resulting frozen and bursting pipes. Leak detectors (\$15 to \$200 depending on the model) use wireless or wired sensors to sound an alarm (battery-operated models), or can be wired to an automatic shutoff valve on your main water line when water touches the sensor. For purchase info, search online for "leak detectors" and "temperature sensors."



Zircon

This leak detector (\$13) is available at home centers and online.

Beef up your garage door

Strong winds often wreck garage doors. So a tougher door might cut your premiums by 10 percent. You have two options: Install a new hurricane-resistant garage door, or use a retrofit kit with horizontal and vertical bracing to strengthen the existing door. A new double-bay residential hurricane garage door can cost as much as \$1,200. A retrofit solution for a double-door garage will run about \$500 and can be ordered from securedoor.com or special-ordered from Lowe's. If you have a \$1,000 premium, your payback would be about five years.

Inform your agent about upgrades

Insurance companies like to insure homes with newer plumbing and electrical systems as well as burglar alarms and sprinkler systems because these features reduce the risk of fire and water damage. If you make upgrades to any of these systems in an older home, let your insurance agent know.

Tell your insurer when you retire

If you're over 55 and retired, you may qualify for an additional 10 percent discount. Insurers figure that you'll be around the house more and are less likely to be burglarized. You'll also be more attuned to disasters in the making and have more time for home maintenance projects.

Make automatic payments

Many insurance companies will discount your premium 2 percent if you pay your premiums by "automatic withdrawal" from a bank account.

Put the brakes on high auto insurance costs

Inurance laws vary by state, so some of these cost-saving methods may not apply in your area. But if you follow these tips, you should be able to save an average of \$300 per year, or possibly more, on your car insurance. The model for the savings is a two-car household with two 57-year-old adults and one college-age driver. This household's annual premium is \$2,300 based on one accident and one speeding ticket.



Drop collision and comprehensive coverage when it makes sense. Save \$300



Let's face it—old cars (10-plus years) aren't worth much. So at a certain point it doesn't make sense to keep paying for collision and comprehensive (C&C) coverage. Find the "book" value of your vehicle on the Internet (nada.com, edmunds.com or kbb.com) or at the library. Then add up the annual premiums for C&C.

Chances are, you're paying for the full value of the vehicle every three years. If you're comfortable accepting a low level of risk, cancel your C&C coverage and put that money away. You'll probably come out ahead.

Pay promptly. Save \$15 to \$50

Some companies offer incentives for paying the invoice within 10 days, rather than taking the full 30 days. If your insurer offers a "prompt pay" discount (ask for one), it may be worth your while to reprioritize your bill payment schedule. If you're temporarily short on cash, it may even make sense to pay with your credit card.

Complete a "senior driver" training (and refresher) course. Save \$200

Most insurance companies offer a discount for each driver 55 and older who takes an authorized driver safety education program (some states mandate this discount). The initial course is eight hours, and some companies (and states) allow you to take a four-hour online version (\$20 per driver). Classroom rates vary. You'll be a safer driver and can pocket the savings every year. For more information, contact your insurance agent, AARP, AAA or your local adult education center, or search the Internet for "senior driver education."

Pay in advance. Save \$60

You pay *lots* extra if you're paying your car insurance monthly. Find out the least expensive pay-period—usually six months. If you have the cash, you could save even more money by paying the full year's premium in advance (check with your agent).

Shop early. Save \$50

Everyone should shop around for new insurance rates every three years. Insurance companies reward early shopping (30 days before renewal is perfect) by giving better rates. Last-minute shopping (less than 10 days before the policy expires) makes insurance companies think you're irresponsible, and that will be reflected in a higher quote.



Kid at college? Save \$400

This one's a no-brainer. If your kid is away at college, minus the family car, your insurance rates will be lower. Tell your agent that your kid is at school and work out arrangements for those few days when he or she is home. If your student has a car at school, you should still notify your agent. The rates may be lower based on the school's location.



Change jobs or retire? Save \$60

If you drive 20 miles to work every day, you're paying a higher premium than people who drive only 5 miles. So if you get a new job closer to home, tell your agent immediately. Also, if you're lucky enough to retire, tell your agent so they can reclassify you as a "pleasure driver." You'll see a drop in your premiums in both cases.



Install an alarm. Save \$100 to \$200

The discount varies by location, the make and model of the alarm, and the theft likelihood of your particular vehicle model. But insurance companies give the largest discounts for installing a "stolen vehicle recovery" system like MobileGuardian, LoJack, VehicleRECOVER or GM's OnStar. These systems can locate a stolen vehicle within minutes and prevent a total loss. The discount alone may pay for one of these systems in just a few years.

You can learn more about these systems by visiting www.vehiclerecover.com, lojack.com and mymobileguardian.com.

Track your tickets. Save \$100

Insurance companies check your driving record regularly and increase your premium on the very next bill if they find a traffic violation. But they're not always so quick to reduce your premium later when the violation falls off your record. So keep track of the dates of your tickets and ask for a reduction once your record is "clean" (usually three years, but check with your state's Department of Motor Vehicles).



Avoid small claims. Save \$200

If you get a small dent or other minor damage on an older car, think twice about filing a claim and getting it fixed. To avoid rate hikes, it might be worth your while to just live with it if there are no safety issues. And if you have towing coverage on your policy and use it to get your jalopy towed every six months, be ready for a 10 percent rate increase on your next renewal. Buy a roadside assistance plan (available from AAA, AARP and other vendors) instead. It's cheaper.

Tips for sharpening knives, scissors and blades

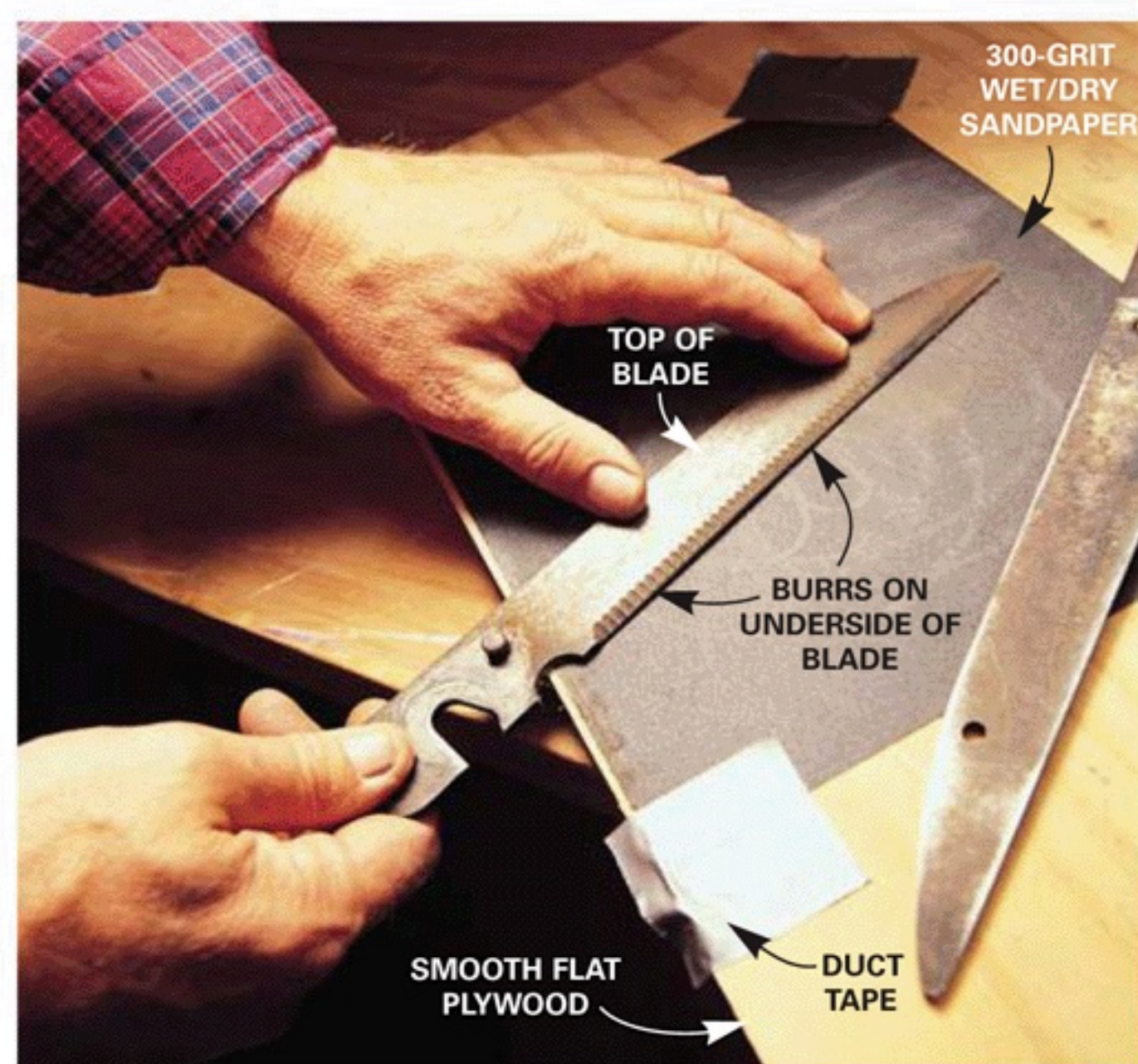
Sharpen your hedge shears

Hedge shears are perhaps the most abused garden tools. Because of their huge blades, it's tempting to use them as pruning shears. They're designed for cutting green wood only, no thicker than 3/8 in. Cutting thick branches or dried wood can stress the pivot nut and even bend the blades slightly.

1 Check the pivot nut before sharpening. It could be loose, making the blades drift apart while cutting and tear the twig instead of cutting it cleanly. The nut should be snug with no play in the pivot. With the nut tightened, check the tool; if it cuts cleanly, it doesn't need sharpening. If it still cuts poorly, look down each blade to make sure it's not bent. If a blade is slightly bent, loosen the pivot nut and separate the blades. To straighten the blade, put it in a vise, slip on some thick leather gloves and tweak it until it's straight.



2 Clamp the blade firmly in a vise. Examine the factory edge. Hold the file with both hands and mimic the direction of the bevel like a golfer taking a practice putt. Now move the file in one broad stroke away from you along the entire cutting angle. To reiterate, move the file in one direction, away from you. Don't use small, jerky strokes or you'll lose the factory edge. As you work, you can see the clean metal path left by the file. Adjust your angle as needed to file the entire edge evenly. Repeat this motion several times until you expose clean metal over the whole edge. Usually it'll take only about 10 strokes. Do the same with the other blade.



3 Place a sheet of 300-grit wet/dry sandpaper on a smooth, flat piece of plywood. You'll be able to feel the burrs (be careful—they're sharp) on the underside of each blade caused by the filing action. To remove them, lightly sand the back side of the blade. Keep the blade flat and move it in a circular motion. After making several circles, pick up the blade and gently feel the edge. When the burrs left by the file disappear, carefully assemble the blades and lightly oil the moving parts with 3-In-One oil. Then try a test cut with the shears. They should cut better than ever.



Keep knives and scissors sharp

There's always been an air of mystery about the best way to keep kitchen knives sharp. But if you're not interested in special honing stones or the fine points of using a chef's steel rod and just want a sharp knife when you carve the roast, inexpensive tungsten carbide or ceramic sharpeners are the way to go.

There's no technique to learn. The sharpening inserts are preset at the proper angle—you just draw the blade (Photo 1) or scissors (Photo 2) through the sharpener a few times and you're done.

Tungsten carbide sharpeners are available at kitchen supply stores, hardware stores and online, and range in price from \$5 to \$30.



1 Hold the sharpener in place and pull the knife through the slot several times, starting at the knife handle.



2 Insert scissors into the slots and then pull them back through. Squeeze the handles as if you were cutting while you pull.

Sharpen a knife with a tungsten sharpener

These little sharpening tools are designed for knives that still have their factory edge intact without nicks or irregularities—knives gradually dulled from everyday use.

The tool has two opposing tungsten steel sharpeners at fixed angles to remove metal and sharpen the edge as you pull it from the base of the blade to the tip. You can buy one for less than \$10 and it'll do a respectable job of sharpening most kitchen knives. But the small, preset angle of these sharpeners makes them less effective on more blunt edges, like those on butcher knives. These knives have a fatter blade and wider angle, and require the use of a sharpening stone.

Pull the tungsten sharpener straight down the edge of the knife from base to tip. Make several passes using a light, consistent pressure. Be sure to include the tip in each stroke.



Sharpen your lawn mower blade

You wouldn't take care of grass that's too long by tearing off the end of each blade, would you? But that's exactly what a dull lawn mower does, leaving the torn grass vulnerable to sun damage and disease. You could sharpen your mower blade with a file (it takes forever!), a rotary tool or a bench grinder, but here you'll learn how to do the job with an angle grinder. It's fast and easy. If you don't own a grinder, you can buy one for about \$60 and use it for all kinds of other tasks too.

To sharpen your lawn mower blade, you'll need a socket or wrench to fit the blade nut. Tough nuts may call for a breaker bar and/or a penetrating lubricant. You'll also need two clamps, a block of wood and, of course, an angle grinder with a metal grinding blade.

Start by disconnecting the spark plug wire (Photo 1). Next, place a piece of plastic (a sandwich bag works well) under the gas cap to prevent gas from leaking out of the vent hole when you tip the mower. Tip the mower so the side with the carburetor faces up.

Clamp a 2x4 block to the side of the mower to keep the blade from turning while you loosen it. Mark the "grass side" of the blade so you don't reinstall it upside down. Use a socket wrench or a breaker bar to turn the nut counterclockwise to loosen it (Photo 2). If it's stubborn, soak it with penetrating oil for a half hour and try again.

Clamp the blade securely in a vise or to the edge of your workbench. Prepare for grinding by putting on your gloves, face shield, hearing protection and a long-sleeve shirt. Before you start grinding, hold the grinder against the blade and tip it up or down until the grinding disc is aligned with the angle on the blade. Try to maintain this angle as you grind. Keep the grinder moving and apply only light pressure so you don't overheat the blade or grind away too much (Photo 3). If you overheat the metal, it'll turn dark blue or black and become brittle. Then it won't hold an edge. Your goal is to remove the nicks and



dents and create an edge that's about as sharp as a butter knife. A razor-sharp edge will dull quickly and chip more easily.

Make several passes across the blade with the grinder, checking your progress frequently. You don't want to grind off more than necessary. If your blade has a lot of nicks and gouges, try this. Start by holding the grinder at a right angle to the blade and grinding the edge of the blade flat to remove the nicks. Be careful to use light pressure and move quickly. It's easy to burn the thin edge. After you've removed the nicks, go back to grinding at the correct blade angle.

If your blade has deep nicks or is cracked, bent or worn thin, don't sharpen it; buy a new one. You'll find the best selection at stores that sell and service lawn equipment. Take the old blade with you to get an exact match.

If you don't grind away the same amount of metal from both sides, the blade can become unbalanced. You can buy a special blade-balancing cone or simply hang the blade on a nail (Photo 4). Correct an unbalanced blade by grinding a little metal from the blunt end of the heavy side of the blade until it balances on the nail. Make sure the marked side is toward you when you reinstall it and that you tighten the nut securely.



1 Pull the wire from the spark plug. Remove the gas cap, put a piece of plastic over the opening and replace the cap. This will help prevent gas spills when you flip the mower to access the blade.



2 Clamp a block to the lawn mower skirt to stop the blade from spinning while you unscrew the nut. Use the longest wrench you can find to loosen the nut. It's likely to be very tight.

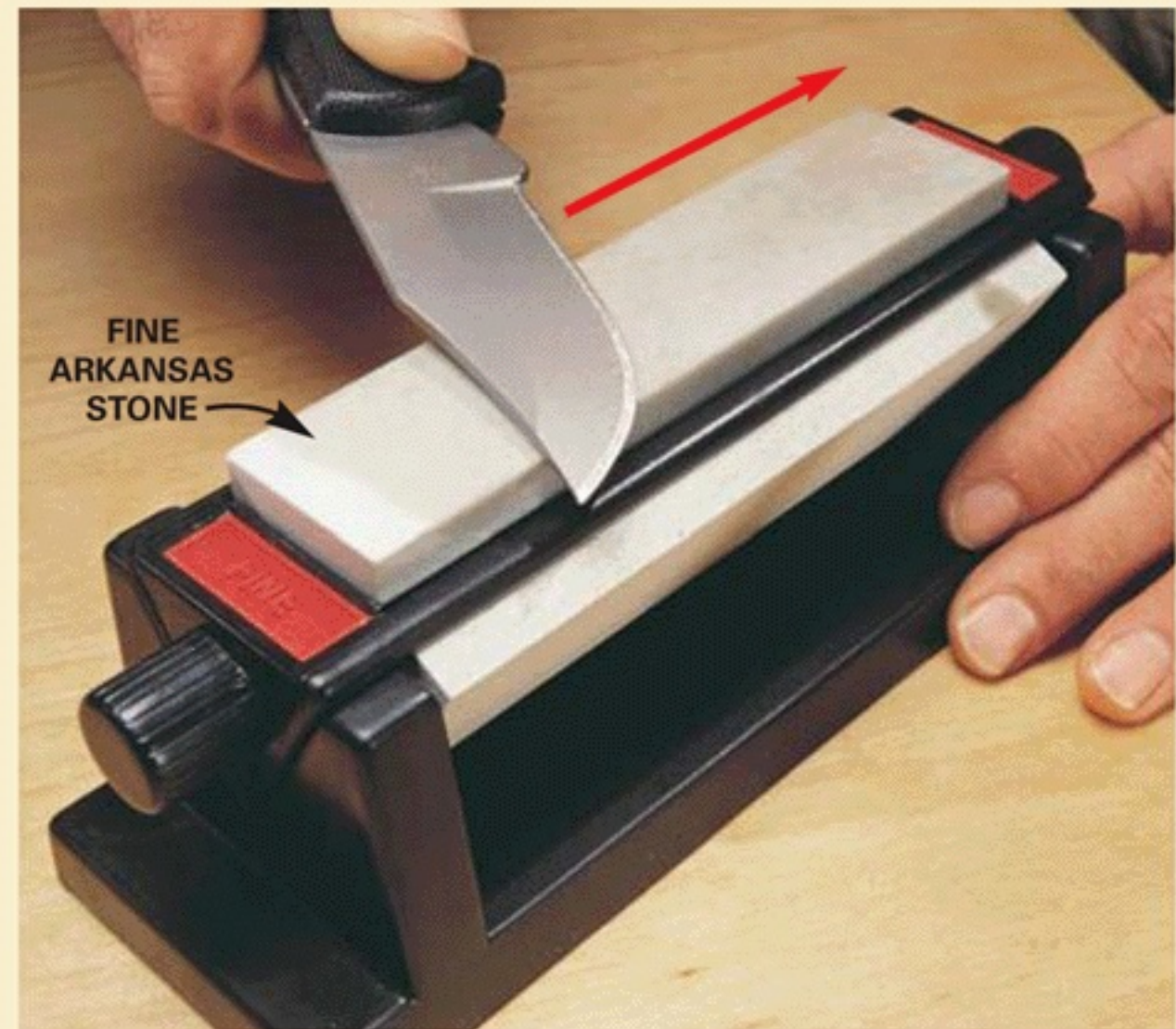
Sharpen a hunting knife on a stone

You can't always match blade angles with jigs, so if you want an exact match, use the traditional sharpening technique with a sharpening stone. Practice on a knife that you're not particularly fond of. You can buy individual stones for \$5 to \$20, or you can get an inexpensive (\$8) synthetic stone with a medium grit on one side and a fine grit on the other that'll handle most sharpening jobs. They're available at hardware stores. This stone sharpening device (Photos 1 and 2) had three stones built in (coarse, medium and fine) and will handle any type of knife. The coarse stone is only needed for serious edge restoration.

The condition of the knife's edge will determine what grit of stone you should use. If you have nicks or irregularities due to previous bad sharpening jobs, start with a coarse grit and move to medium and then to fine grit. If your knife is just dull from use, you'll only need the fine stone.



1 Push the knife away from you at about a 15-degree angle or until the angle of the cutting edge is aligned with the stone. Hold the blade firmly by locking your wrist and moving only your arm. The motion should feel like you're cutting a thin slice off the top of the stone.



2 Pull the knife back toward you at the same angle immediately after the first pass away from you. Again keep a light pressure on the knife and maintain the same angle through the entire stroke from base to tip. Always use several drops of oil during each sharpening. Repeat the push and pull strokes several times for a sharp knife.

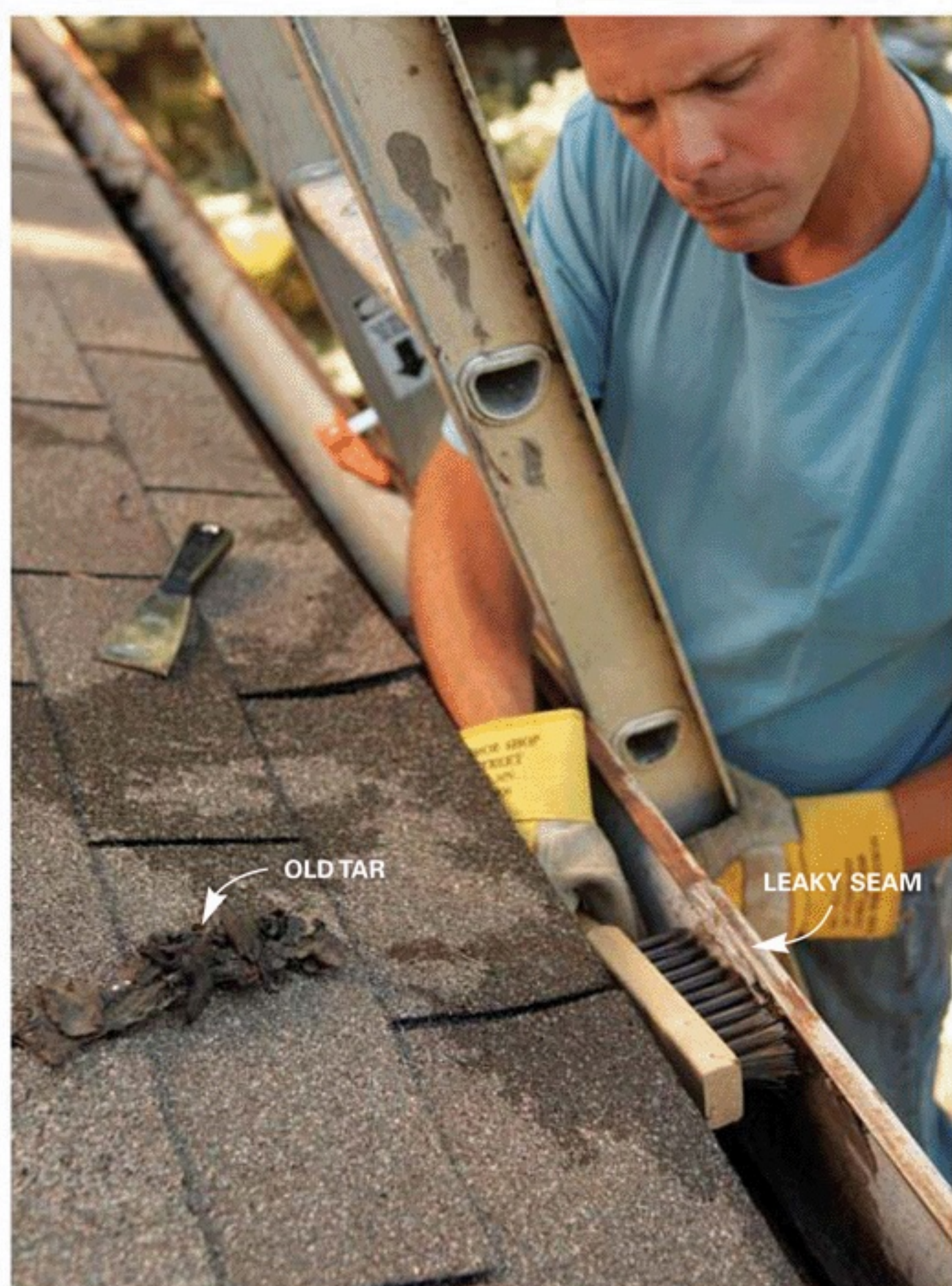


3 Grind the blade carefully with an angle grinder to remove nicks and dents and restore the edge. Make several light passes to avoid overheating the blade.



4 Balance the blade on a nail after you've sharpened both edges. If one side is heavy, it'll drop. Mark the heavy side so you'll know which end to grind. Grind a little off the heavy side and hang the blade on the nail again to recheck it. Repeat this process until the blade hangs level.

Easy exterior repairs



Quick fix for leaky metal gutters

Gutter leaks usually start at rusty spots or seams that have opened up because of expansion and contraction. If your gutter is still basically sound, the easiest way to stop the leak is by covering the damaged area with roof and gutter repair tape (\$15 to \$30 a roll at home centers and hardware stores).

Prepare the gutter by scraping out as much old tar or caulk as possible. Wire-brush the metal thoroughly to get rid of rust and to give the tape a clean surface for bonding (Photo 1). If the gutter is badly rusted or has been heavily coated with tar that you can't scrape out, spray on a special adhesive primer before applying the tape (Protecto-Tek is one brand, but you may need to special-order it).

Cut the tape with scissors or a utility knife (Photo 2). Tear the paper backing off the tape and lightly adhere one edge of the tape to the top of the gutter. Roll the tape down the wall of the gutter, pushing it firmly into curves and corners (Photo 3). Work wrinkles and bubbles flat. Overlap long seams by at least 1 in. and end seams by 4 in.

- 1** Clean the area around the leak with a stiff scraper and a wire brush, then rinse off all dust and wipe completely dry.



- 2** Cut the gutter repair tape long enough to overlap the leaky area by at least 6 in. in each direction.



- 3** Starting at the center, press tape firmly into place. Follow the contours of the gutter and smooth out all wrinkles.



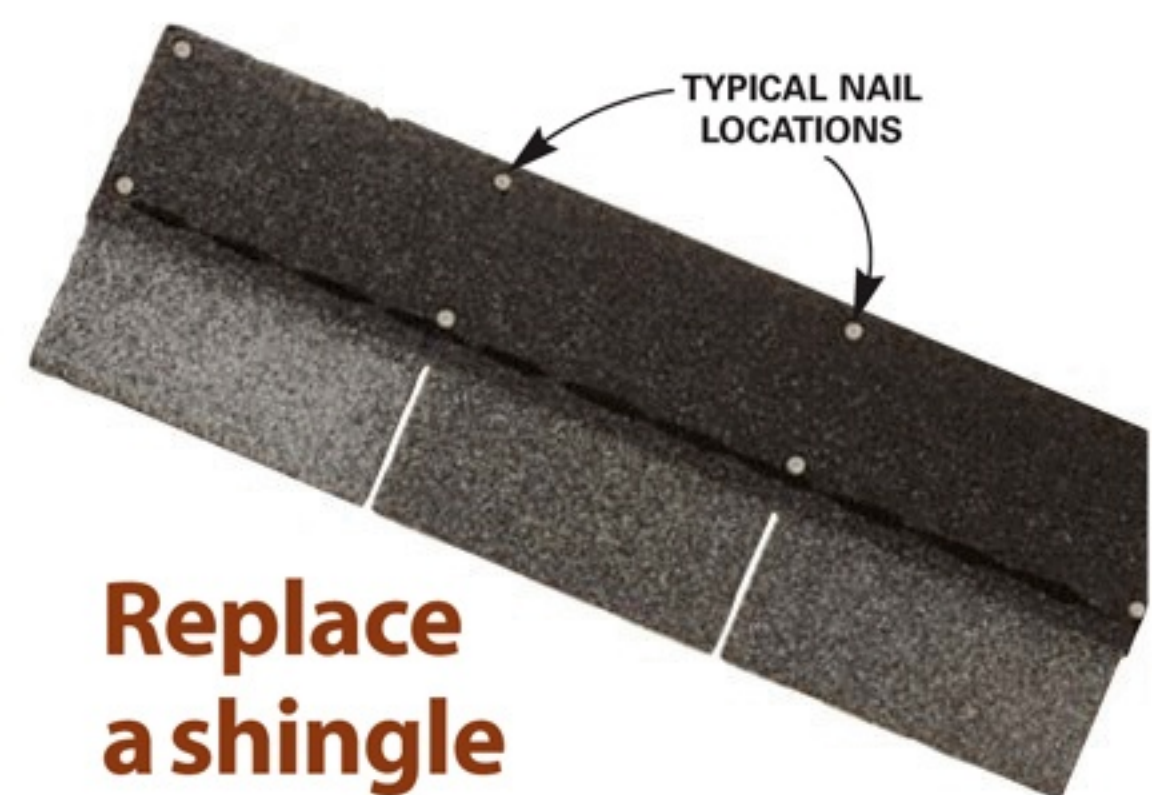
1 Gently tap a flat bar under the shingles to break the seal-down strips free. Don't force it—shingles rip easily.



2 Wedge the notch of the pry bar under the shingle at the nail head, then pry up both shingle and nail.



3 Nail down the new shingle, propping the tabs above as you nail to avoid breaking them.



Replace a shingle

A broken shingle is both ugly and a leak waiting to happen. But as long as you can find matching shingles (and you're not afraid of heights), the repair is straightforward.

Pick a day when the weather is moderate to do the repair—too cold and the shingles can crack; too warm and the shingle sealants are tough to break.

Loosen the tabs under the broken shingle and the next two courses above it (Photo 1). Shingles are fastened with eight nails each—four at the center just above the tab slots and four through the shingle above it—and you have to lift up all the shingles that cover those nails to remove them.

After all the tabs are loose, push the flat bar up under the damaged shingle to each nail, centering the nail in the flat bar notch (Photo 2). To avoid ripping shingles, gently work the pry bar under both tabs as you push it up.

Pop out the nails by prying underneath the shingle instead of trying to dig the nail head out from the top of the shingle; that will wreck the shingle. Then push the shingle down from the nail head and pull out the nail. After removing the center row of nails on the damaged shingle, lift the undamaged shingles above it and remove the next row of nails. Then pull out the damaged shingle.

Slide the new shingle up into place. Nail the center row first, then the center row of the course above it, nailing 1/2 in. over from the old holes (Photo 3). Nail at the top of the slots between the tabs, just above the sealant strip.

Replace damaged vinyl siding

Vinyl siding is tough, but not indestructible. If a falling branch or a well-hit baseball has cracked a piece of your siding, you can make it as good as new in about 15 minutes with a \$5 zip tool (available at any home center) and a replacement piece. It's as simple as unzipping the damaged piece and snapping in a new one.

Starting at one end of the damaged piece, push the end of the zip tool up and under the siding until you feel it hook the bottom lip (Photo 1). Pull the zip tool downward and out to unhook the bottom lip, then slide it along the edge, pulling the siding out as you go. Then unzip any pieces above the damaged piece. Hold them out of the way with your elbow while you pry out the nails that hold the damaged piece in place (Photo 2).

Slide the replacement piece up into place, pushing up until the lower lip locks into the piece below it. Drive 1-1/4-in. roofing nails through the nailing flange. Space them about every 16 in. (near the old nail holes). Nail in the center of the nailing slot and leave about 1/32 in. of space between the nail head and the siding so the vinyl can move freely. Don't nail the heads tightly or the siding will buckle when it warms up.

With the new piece nailed, use the zip tool to lock the upper piece down over it. Start at one end and pull the lip down, twisting the tool slightly to force the leading edge down (Photo 3). Slide the zip tool along, pushing in on the vinyl just behind the tool with your other hand so it snaps into place.

It's best to repair vinyl in warm weather. In temperatures below freezing it becomes less flexible and may crack.



ZIP TOOL

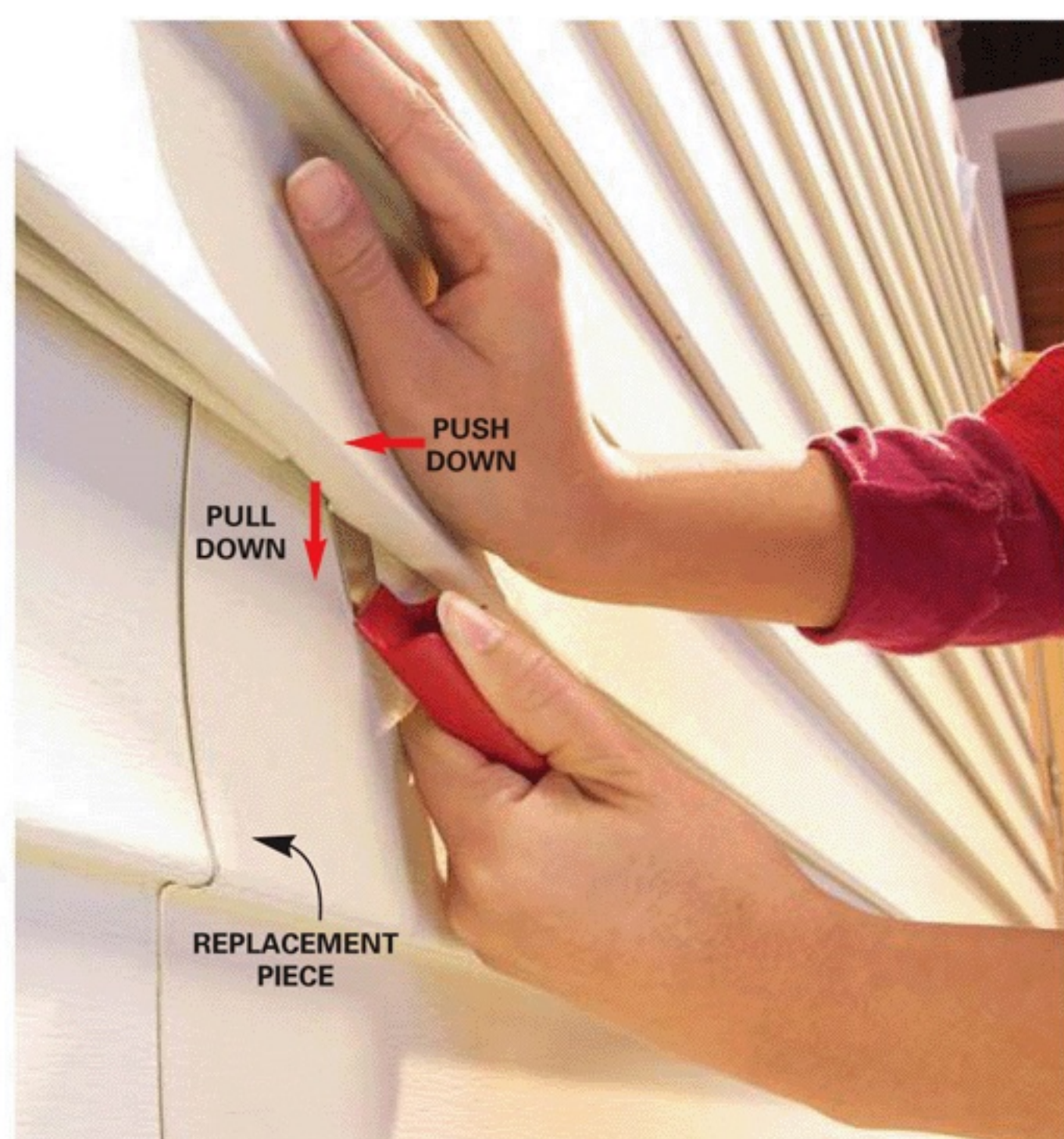
The downside of replacing older vinyl siding is that it can be hard to match the style and color, and siding rarely has any identifying marks. The best way to get a replacement piece is to take the broken piece to vinyl siding distributors in your area and find the closest match. If the old vinyl has faded or you can't find the right color, take the broken piece to a paint store and have the color matched. Paint the replacement piece with one coat of top-quality acrylic primer followed by acrylic house paint—acrylic paint will flex with the movement of the vinyl.



1 Slide the zip tool along the bottom edge to release the vinyl siding from the piece below it.



2 Slip a flat bar behind the vinyl siding and lever out the nails.



3 Install the replacement piece and hook the lip of the upper siding piece into the slot to lock it into place.

Install new garage door weather seal

If the weather seal attached to the bottom of your steel garage door is torn or completely flattened, it's time to replace it with a new piece. Home centers sell two types: a nail-on style for wood doors and a slide-in "bulb" type for steel doors (\$10 to \$20).

Lift the door just enough that the garage door track doesn't get in the way of the weather seal, then slide out the old rubber bulb (Photo 1). You may need to pry the track ends open with a flat screwdriver if they've been crimped. If it's especially stubborn, cut it and remove it in pieces.

Clean the door bottom (Photo 2), then cut the new rubber seal to length with a utility knife. Thread the T-shaped edges into the weather seal track, then slide the seal across the door. Be patient—it takes a lot of pushing and pulling even with a helper.



2 Scrape dirt and corrosion out of the weather seal track with a screwdriver and a stiff brush.



1 Lift the garage door to about 6 ft. high and pull the old weather seal out through the gap behind the door track.



3 Lubricate the rubber with a few drops of dish soap, then push and pull the new weather seal into the track.

Seal a valley joint

Occasionally, flashing that's still intact can allow water passage; this is especially true for valley flashing that doesn't have a raised fin or ridge in the center to help prevent fast-moving water from sloshing. If the roofer didn't

cement the joint—and many don't—the shingles can curl up at the edge and eventually create a gap that water can easily penetrate.



1 Starting at the bottom edge, lift the shingle and apply a heavy, consistent bead of roofing cement along the flashing.



2 Drop and embed the first shingle into the cement. Lift the next shingle and lay another long bead of cement on the flashing and the top edge of the previous shingle.



3 Continue applying cement to both the flashing and the shingles as you work your way up. Press the shingles down to seat them.

Super-simple electrical repairs

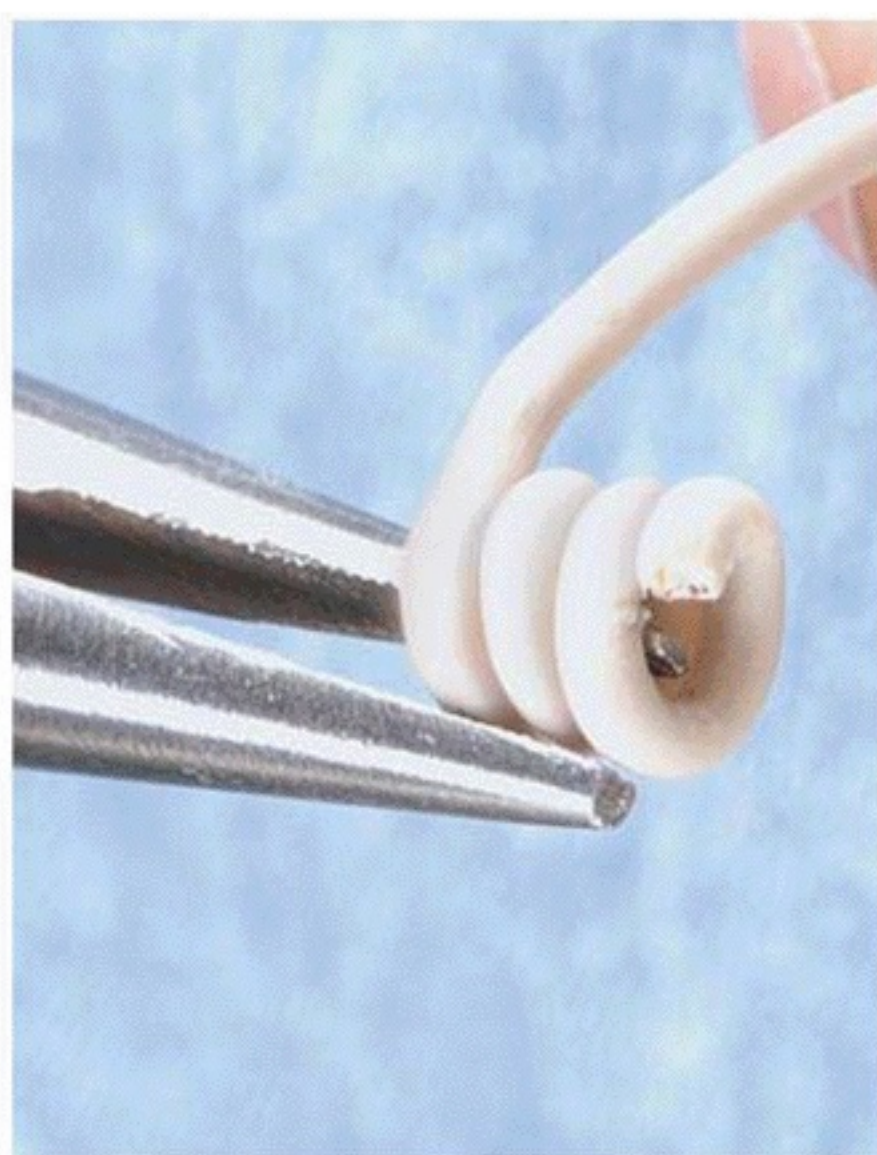
Tighten a loose outlet

A loose outlet pushes in every time you insert a plug. Often it happens because the cutout around the outlet box is too big. When the drywall is taped, gaps around the electrical boxes are filled with mud, which supports the outlet ears. In a heavily used outlet, this mud breaks loose, leaving the outlet ears unsupported. Eventually the cover plate cracks. A scrap of 12- or 14-gauge electrical wire and a few common tools are all you'll need to lock that outlet down tight.

Start by shutting off the power to the outlet (Photo 1). Photos 2 and 3 show how to convert scrap electrical wire into a coiled spacer, which will bridge the gap between the outlet and the electrical box. Once the spacer is completed, install it between the outlet and electrical box as shown in Photo 4. Note: If the face of the box isn't flush with a wood or combustible-material wall, or the box is more than 1/4 in. behind a drywall wall, you must add a box extender (50¢).



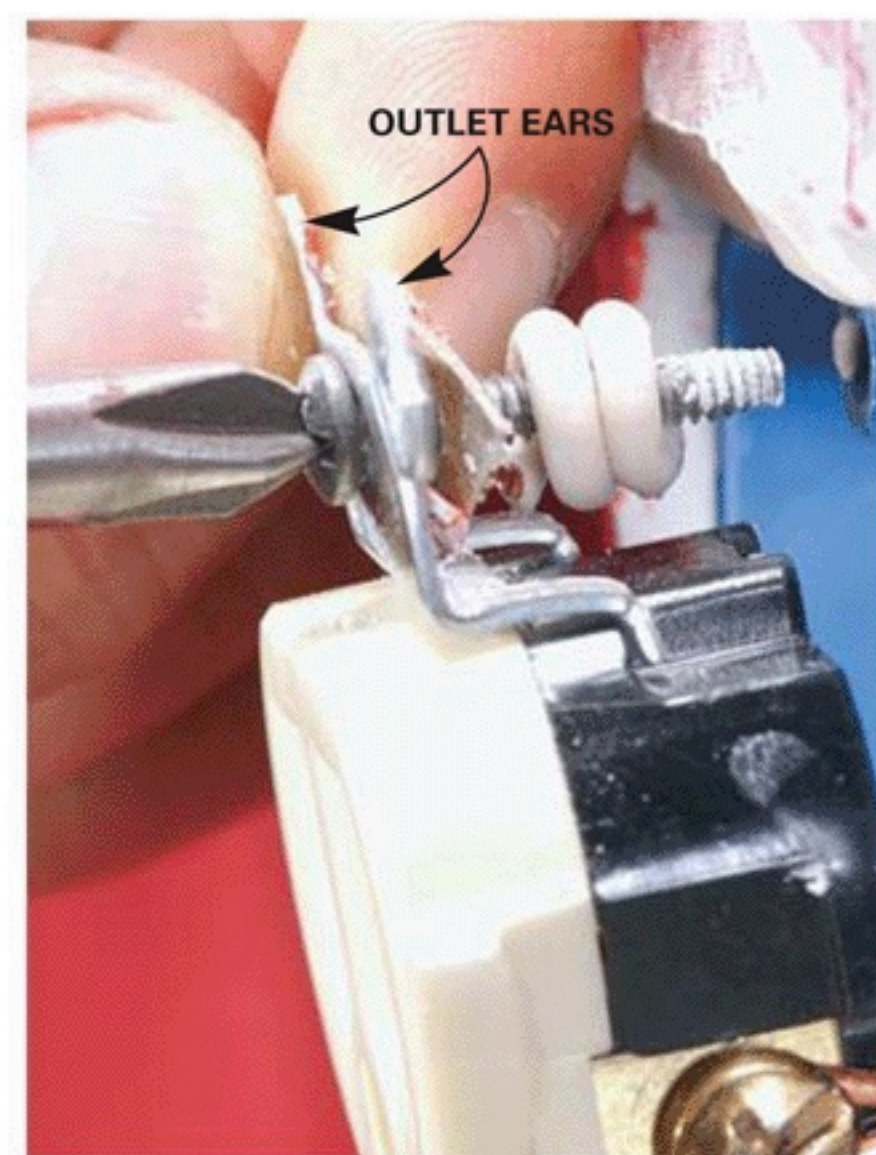
1 Turn off the power at the main panel and remove the broken cover plate. The drywall is often broken behind the outlet ears, leaving them unsupported.



2 Strip the exterior sheathing off a 12-in. scrap of 12- or 14-gauge electrical cable and remove one of the individual wires. Twist the wire into a tight coil with needle-nose pliers.

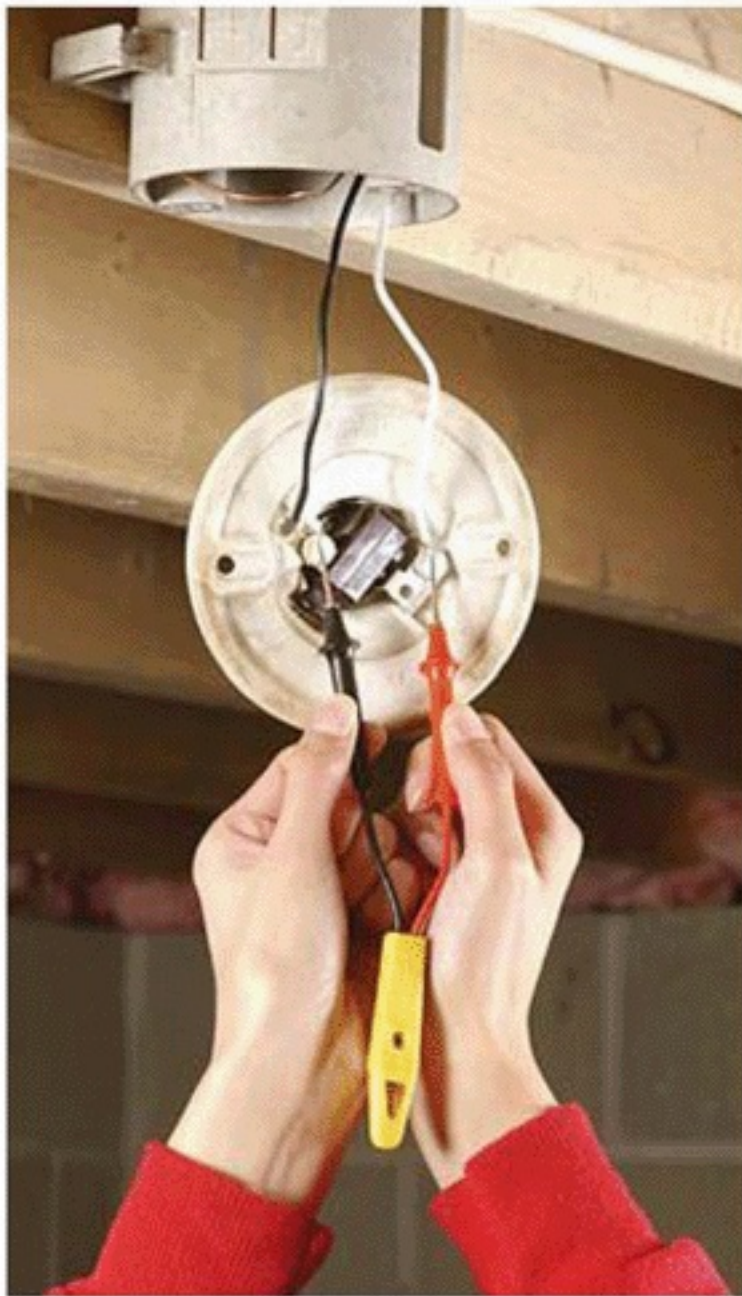


3 Press the coiled end tight to the outlet-mounting screw hole. Snip the coil so it extends just past the wall; the insulation will compress slightly when tightened.



4 Slide the coil spacer over the outlet-mounting screw. Screw the outlet down until the outlet ears are flush to the wall.

Replace a pull-chain light fixture



1 Turn off the power, remove the light bulb and unscrew the fixture from the electrical box. Pull the fixture down, but keep your hands away from the wires. Touch one voltage tester probe to the black wire, and the other to the white wire. If the voltage indicator doesn't light up, the power is off.

CAUTION

Turn off power at the main panel before starting work.

Pull-chain light fixtures are handy for basements and storage areas—until they quit working. The internal switch mechanism can wear out, or pulling too hard on the cord can snap the chain or completely pull it out of the fixture. Replacing the broken fixture is simple and inexpensive (\$2 at any home center or hardware store). Pull-chain fixtures are made from either plastic or porcelain, but we recommend the porcelain because it withstands heat better and lasts longer.

Before starting, flip the circuit breaker or pull the fuse to disconnect the power to the light, then test to make sure the power is off (Photo 1). Replace the broken fixture as shown in Photos 2 and 3. There may be an unused bare ground wire inside the electrical box. If it falls down while you're replacing the fixture, wrap it in a circle and push it up as far into the electrical box as possible.

CAUTION

Aluminum wiring requires special handling. If you have aluminum wiring, call in a licensed pro who's certified to work with it. This wiring is dull gray, not the dull orange that's characteristic of copper.



2 Loosen the terminal screws and unhook the wiring from the old fixture. If the wire ends are broken or corroded, strip off 3/4 in. of sheathing, and bend the bare wire end into a hook.

3 Attach the black wire to the gold terminal screw on the new fixture and the white wire to the silver terminal screw. Wrap the wires clockwise so they cover at least three-quarters of the terminal screws. Firmly tighten the screws so the copper wire compresses slightly. Twist the fixture to spiral the wires into the electrical box. Screw the new fixture to the box snugly, but don't overtighten it or the porcelain might crack.



Lamp repair

A lamp has lots of parts. But unlike most other gadgets around your house, lamps are made of interchangeable parts. You can fix almost any lamp—cheap or expensive, brand-new or antique—by using the same parts and following the steps shown here.

Trying to diagnose the lamp's problem is a waste of time; just replace the three working parts (the socket, switch and cord) and success is guaranteed. Plus, with all those parts replaced, your lamp should be trouble-free for decades.

Your trip to the hardware store or home center will probably take longer than the fix itself. You'll need a socket and a cord, one of which must have a switch. Most sockets, like the ones shown here, have a switch inside, but many stores carry switches for cords, as well. You can install a switched cord in a lamp that originally had a socket switch or vice versa.

Figure A shows how a typical lamp is put together. Photos 1 – 3 show how to replace the working parts. There's just one thing that requires close attention: When you connect the cord to the new socket, make sure the wire leading from the wider prong on the plug goes to the silver screw. This "neutral" wire is identified by ribs, indentations, lettering or square edges on the plastic coating.

Cost: \$5 to \$10

Time: 30 minutes

Tools: Screwdrivers, wire stripper

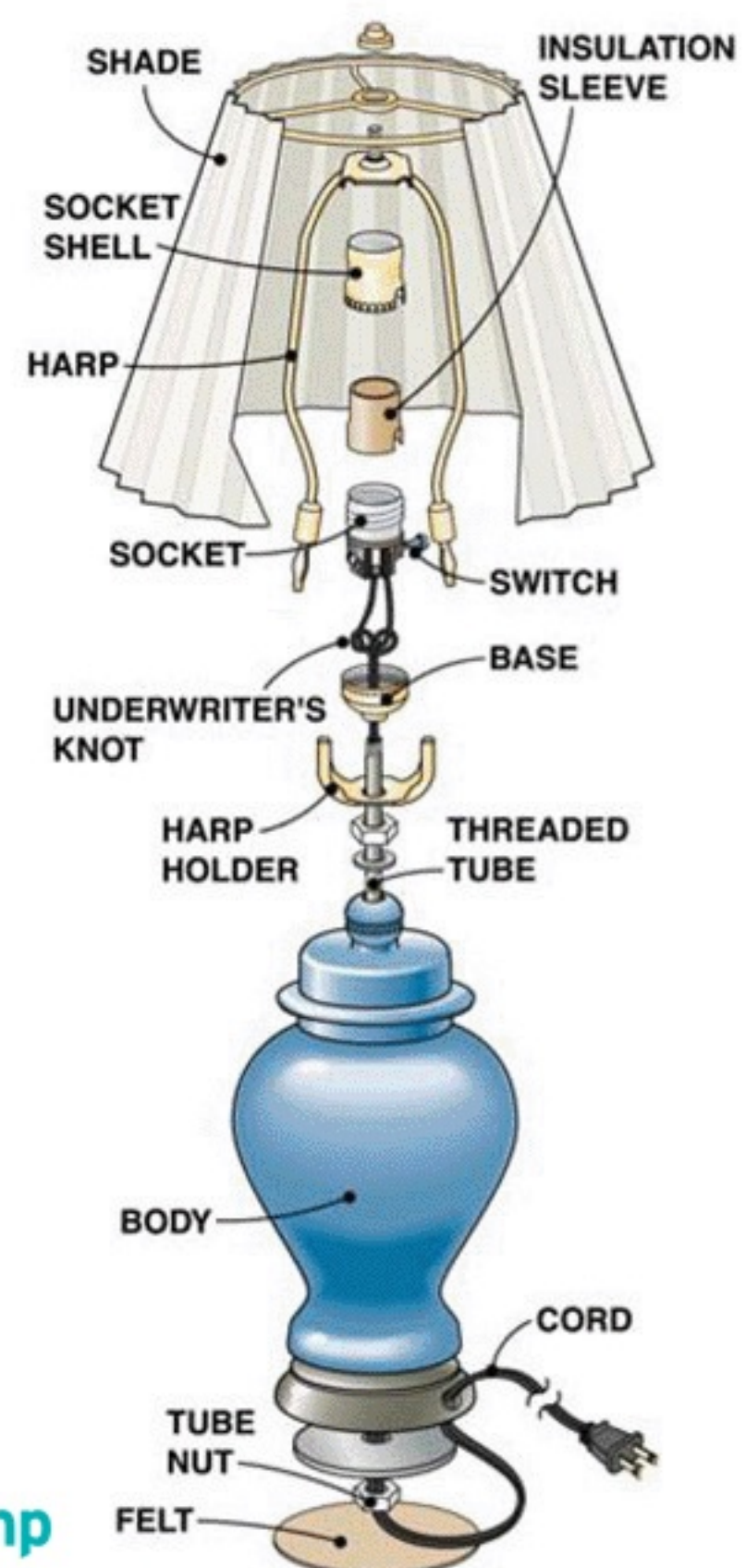
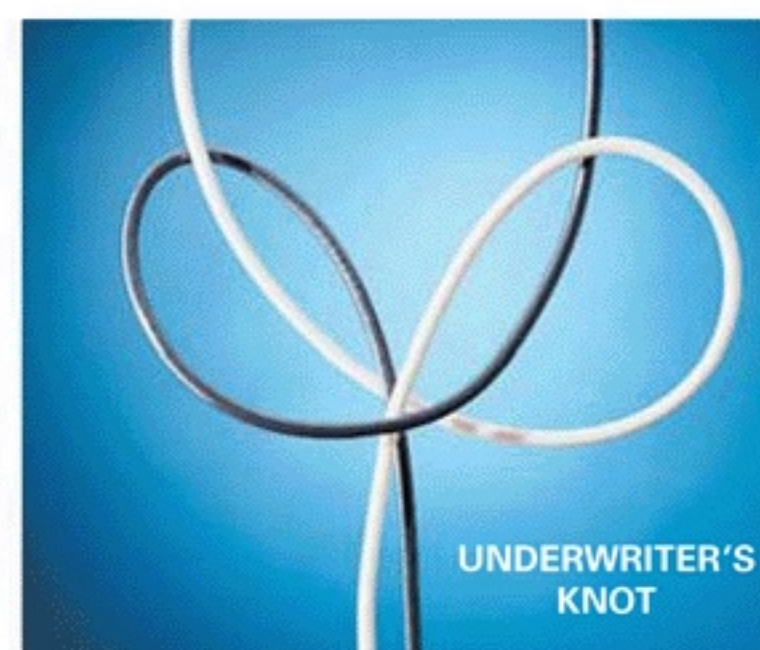


Figure A
Anatomy of a lamp



1 Pry the socket shell out of the base with a small screwdriver. Then disconnect the socket from the cord by loosening the screw terminals (see Photo 3). To remove the base, loosen the set screw (if there is one) and turn the base counterclockwise. Then screw on the new base and feed the new cord up through the lamp body.



2 Tie an Underwriter's knot about an inch from the end of the cord. The knot prevents tugs on the cord from pulling the wires loose from the screw terminals.



3 Connect the cord to the terminals on the socket. To make connections, wrap the wires clockwise around the screws. Be sure to connect the neutral wire to the silver terminal.

Silence a humming dimmer switch

You might think that a dimmer turns down the lights by turning down the power flow. But it actually works like a super-fast strobe, switching the power on and off dozens of times per second. This electrical pulsation causes the filaments in light bulbs to vibrate and that creates the humming sound you hear. An easy solution—which usually works—is to try different brands of bulbs. Some bulbs have beefier filaments, which vibrate less. You can even try “rough-use” bulbs meant for garage-door openers or trouble lights. These bulbs have heavy filaments but are pricey (\$3 each). If bulb switching doesn’t stop the hum, upgrade your dimmer switch. Dimmers that cost about \$20 usually dampen the electrical pulse better than models in the \$10 range. Swapping out a dimmer switch is usually a simple matter of disconnecting and reconnecting three wires. Just be sure to work safely. Turn off the power to the circuit—and make sure it’s off using a noncontact voltage detector.

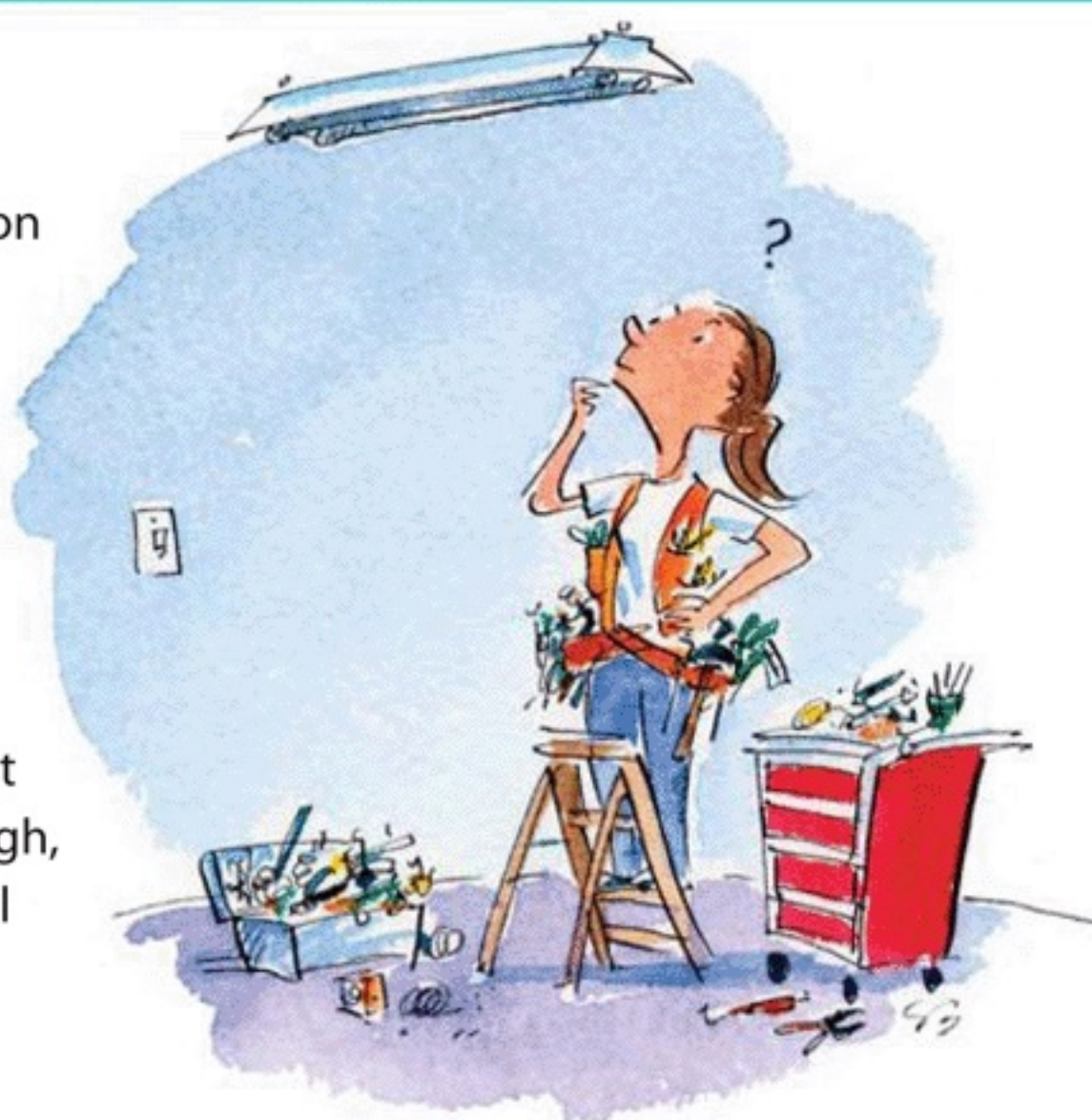


High-quality dimmer switches are less likely to cause humming.



It's the bulb!

I walked into the laundry room the other day and turned on the light switch and nothing happened. The circuit breaker hadn't tripped, so I thought it must be the switch or the ballast in the fluorescent fixture. I got my tester and checked the two wires on the switch. My tester didn't light up, so I thought it must be bad. After installing the new switch, the light still didn't work. Next I bought a new ballast for the fixture, installed it and still nothing. Then it dawned on me that it must be the simplest solution of all—a burned-out fluorescent bulb. Sure enough, once I replaced the bulb, it worked perfectly. Next time I'll start with the most obvious!

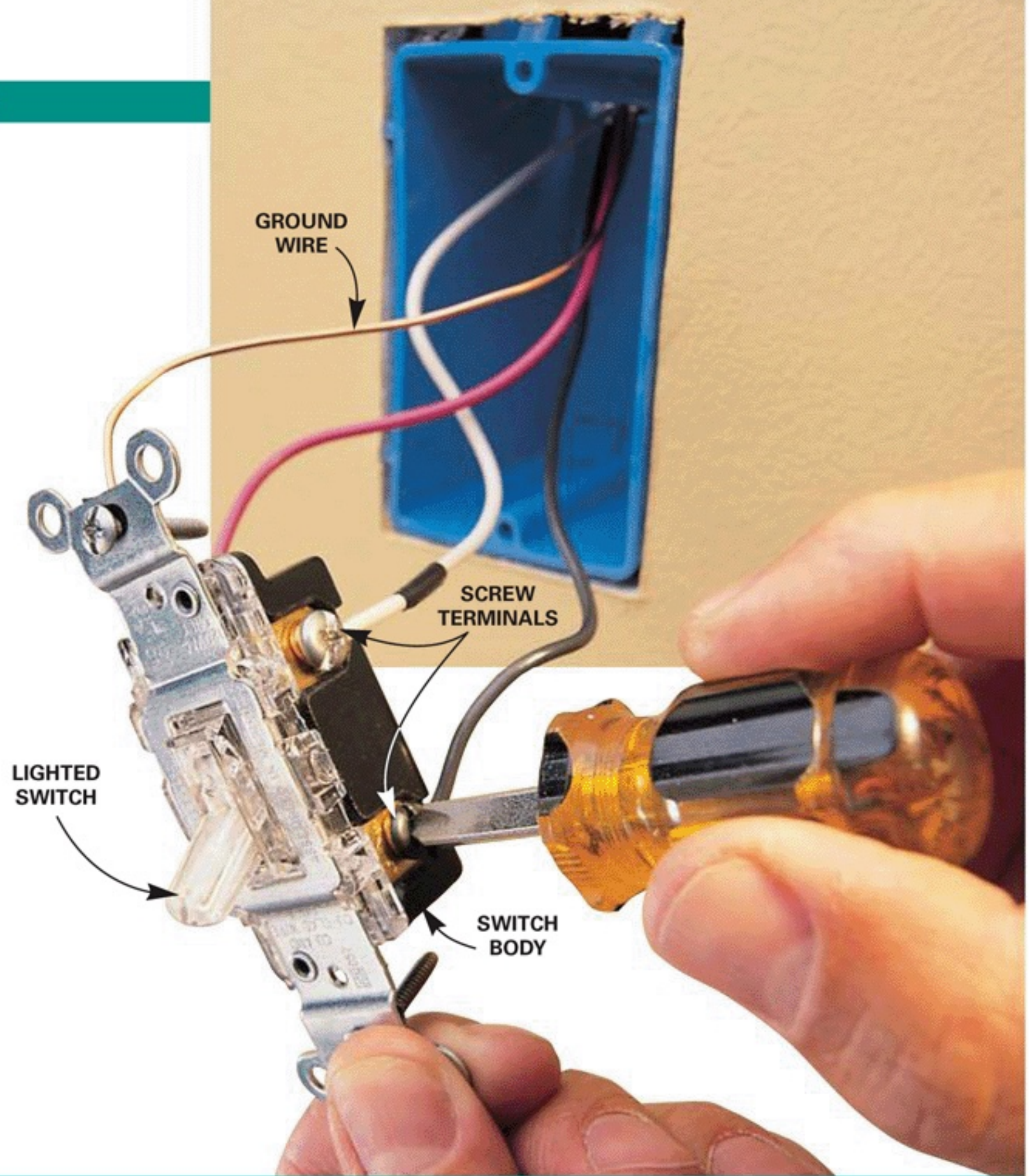


SUPER-SIMPLE ELECTRICAL REPAIRS

Install a lighted switch

If you're tired of groping for the light switch in the hallway every night, replace it with a lighted version. When the light is off, the switch glows, making it easy to find. No glow means the light is on, so you can also use a switch like this to tell you whether you left the lights on in the garage or basement.

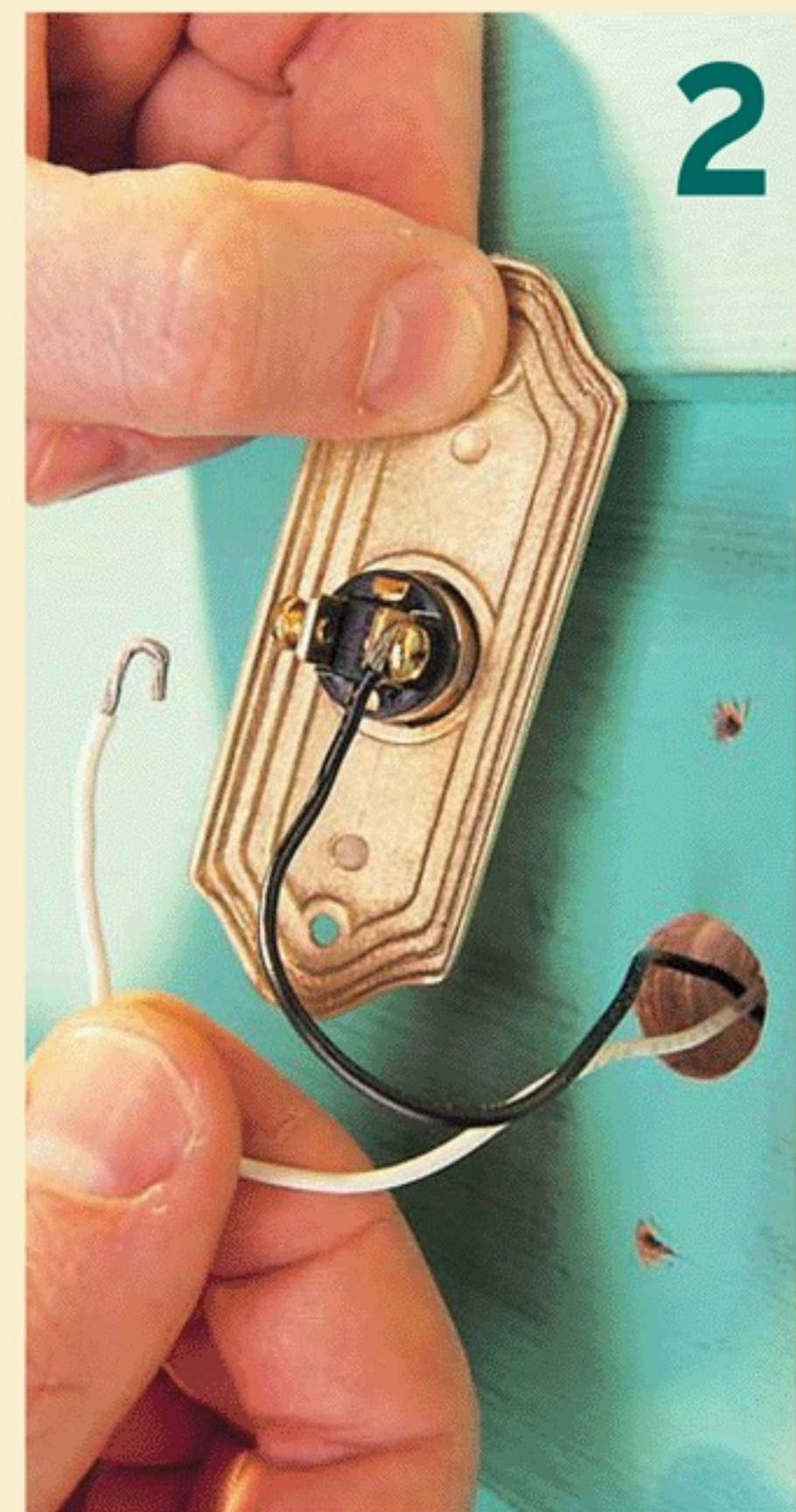
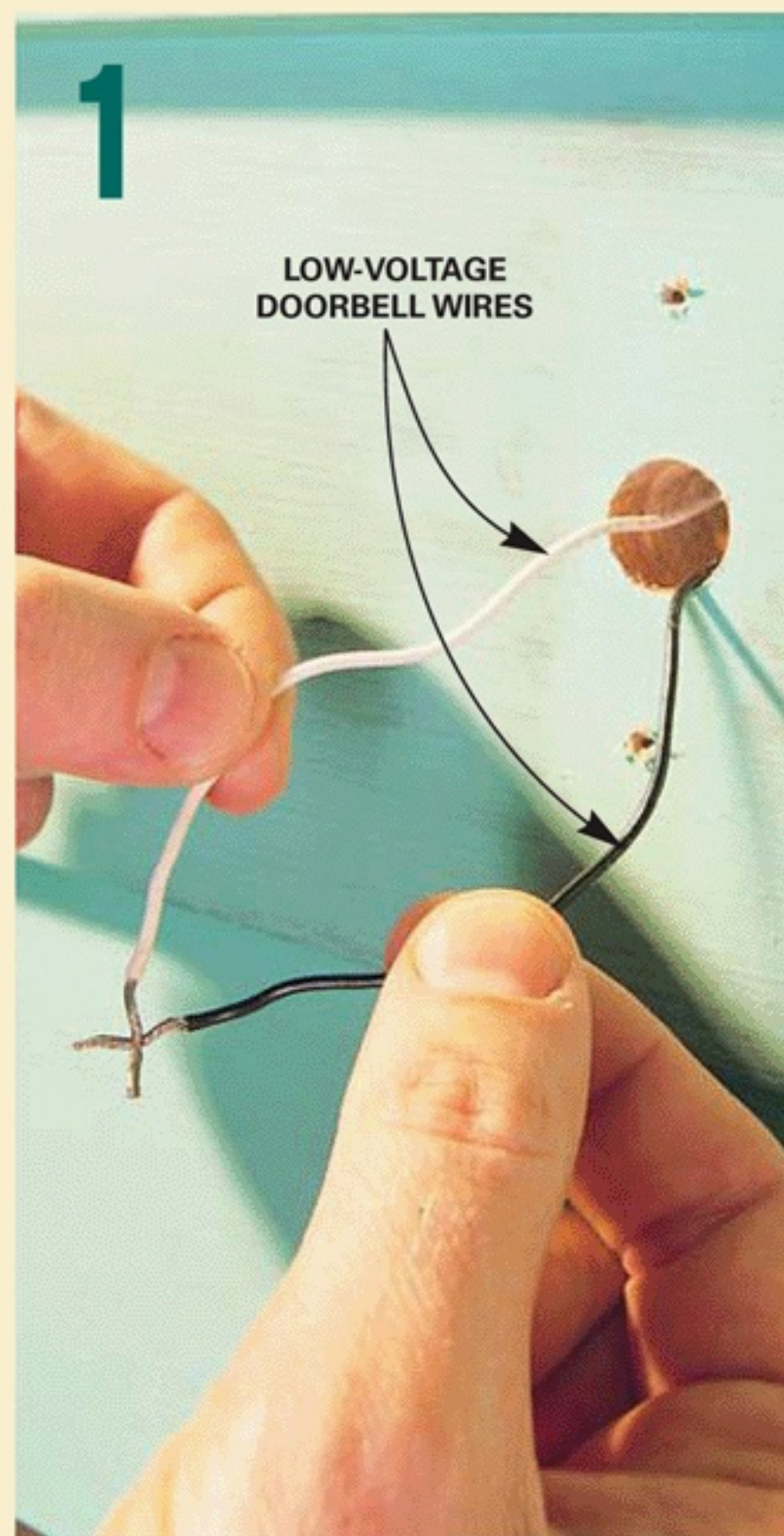
Standard single pole lighted switches cost about \$4 at home centers. Three-way models—for lights controlled by two switches—cost about \$6. Installing either type is a simple matter of connecting wires to screw terminals. Just turn off the circuit at the main electrical panel, remove the old switch and connect the wires to the new switch exactly as the old one was connected. With a single pole switch, you'll have two wires and perhaps a ground to connect. With a three-way, you'll connect three wires and maybe a ground. When you're done, wrap the switch body with electrical tape.



Replace a doorbell button

A doorbell has four components that can go bad. The push button is the most likely culprit, followed by the chime unit. The transformer and wiring tie for third place.

Luckily, the most likely problem, the push button, is also the easiest to fix. Doorbell buttons are connected to low-voltage wires, so there's no danger of electrocution with this repair. Begin by removing the screws that hold the button in place. If your push button isn't fastened with screws, pry it out with a putty knife. Disconnect the two wires from the button and touch them together (Photo 1). If the doorbell rings, the button is the problem and you can solve it simply by connecting a new button as shown in Photo 2.



Time: 15 minutes

Cost: \$3 to \$10, depending on the button

Tools: Small screwdriver

Storage & organizing in the kitchen

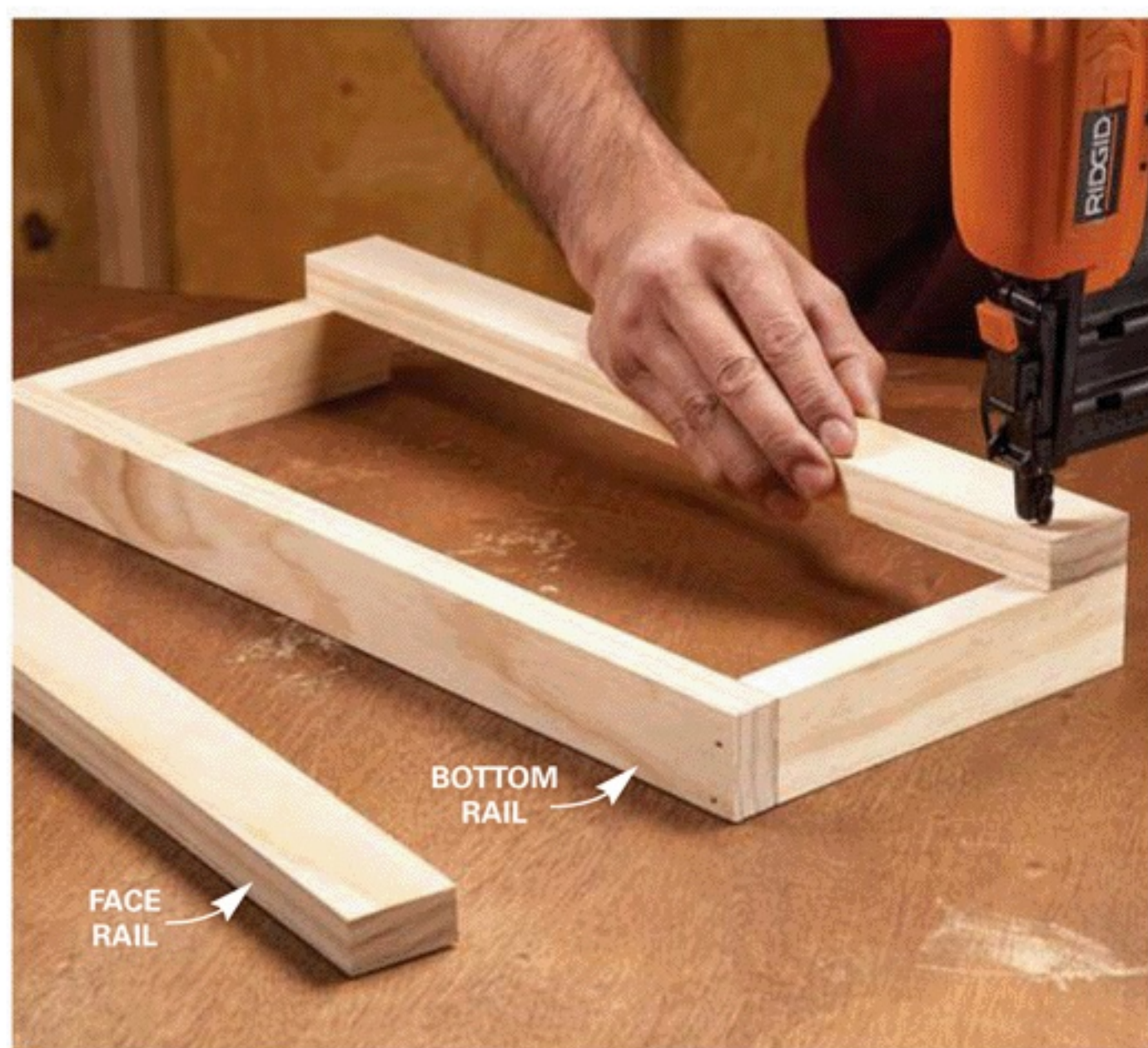


Cutting board rack

You can make this nifty rack for less than \$10 and mount it inside a cabinet door to stash your cutting boards out of sight. It goes together in a snap since it only requires a 6-ft. 1x2 and two L-brackets.

Measure between the door stiles to get the maximum width of your rack. Make sure the rack will be wide enough for your cutting board (or spring for a new one). You'll also need to mount the rack low enough so it doesn't bump into a cabinet shelf when the door closes. Cut the bottom and face rails to match the space between the cabinet door stiles.

Cut the sides 7-1/4 in. long. Nail the sides to the base. Then nail the two face pieces at the top and bottom to complete the rack (Photo 1). The easiest way to mount the rack is to take the cabinet door off its hinges and lay it down. Predrill the screw holes for the L-brackets and mount the rack to the cabinet door using a 1-in. L-bracket centered on each side of the rack (Photo 2).



1 Nail the base rail to the sides, then nail on the face rails. For a quick, clear finish, spray on two light coats of lacquer.



2 Mount the rack on the door with L-brackets. This is easiest if you remove the door. Be sure to predrill screw holes in the door stiles.

STORAGE & ORGANIZING IN THE KITCHEN



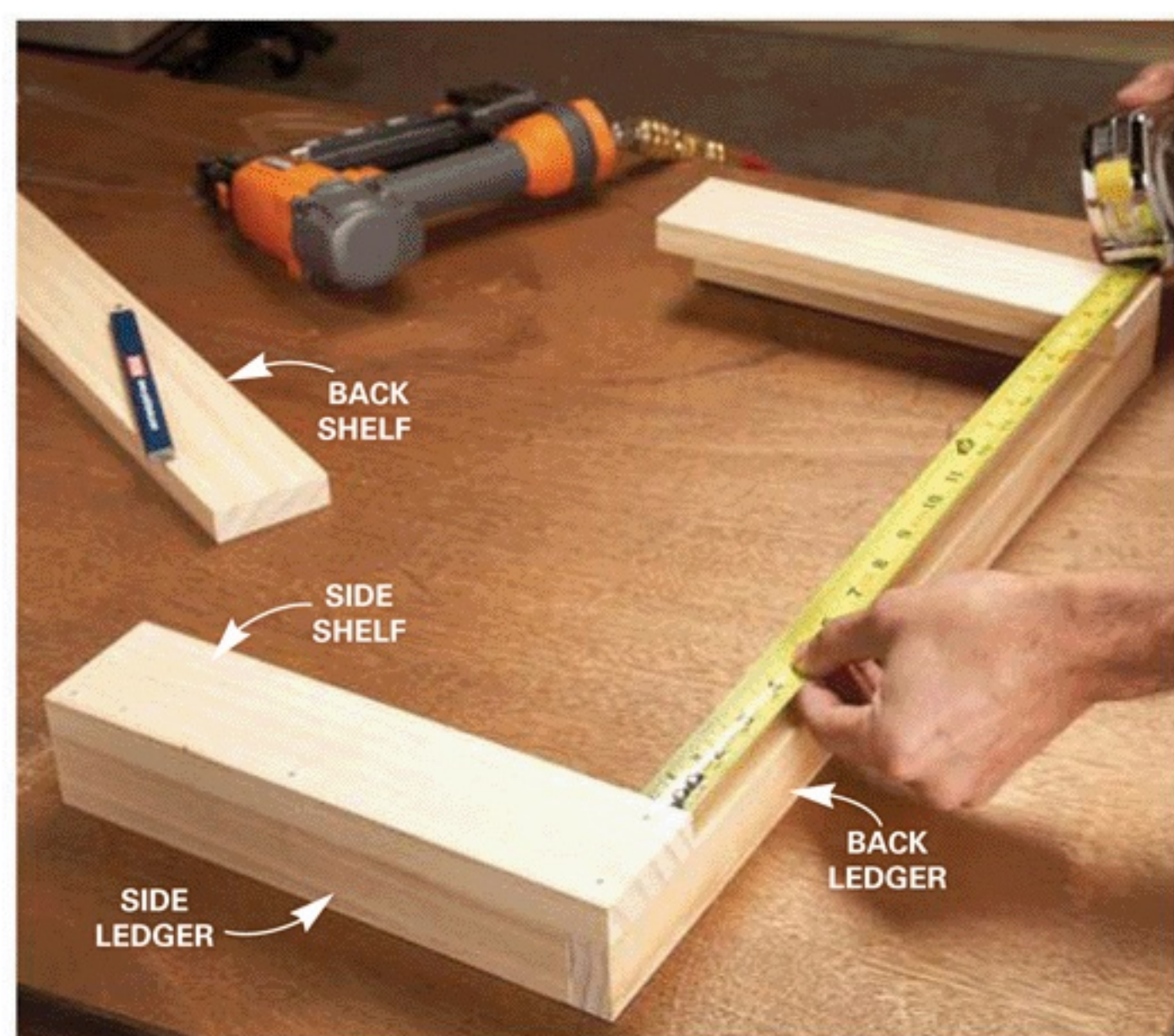
Adjustable spice shelf

This in-cabinet spice shelf puts small containers at eye level and still leaves room in the cabinet for tall items. The materials will cost you less than \$10. You'll need a 4-ft. 1x3 for the top shelf and a 4-ft. 1x2 for the bottom ledger. You can find shelf pegs at home centers in two sizes, 1/4 in. and 3/16 in., so measure the holes in your cabinet before you shop. The secret is to assemble the shelf outside the cabinet and then set it on the shelf pegs.

Measure the sides and back of your cabinet and cut your shelf and ledger pieces. Subtract 1/8 in. from all sides so you

can fit the unit into the cabinet. Attach the sides to the back of the bottom ledger and put two nails into each butt joint. Then nail the top shelf sides into place and pin the shelf back at the corners to hold it flush (Photo 1). Spray a quick coat of lacquer on the shelf before installing it.

To install the shelf unit, carefully fit one end of the "U" into the cabinet, holding it higher at one end, and shimmy it down until it sits firmly on top of the shelf pegs (Photo 2). Shift the pegs up or down to adjust the shelf height.



1 Nail the back and side ledgers together, then nail on the side shelves. Measure between the side shelves and cut the back shelf to fit.

2 Set the spice shelf on adjustable shelf pegs. You may have to remove an existing shelf so you can tilt the spice shelf into place.

Plastic bag dispensers

An empty rectangular tissue box (below) makes a convenient holder for small garbage bags, plastic grocery bags and small rags. Simply thumbtack it to the inside of a cabinet door.



Or make it easy to stow and reuse plastic bags with a dispenser made from a discarded 2-liter soda bottle (right). Cut off the top and bottom with a razor knife. Trim any jagged edges so you don't tear the bags when you pull them out, then screw the dispenser to a cabinet door or closet wall (or attach with hook-and-loop tape).



Spice storage

Small spice containers use shelf space inefficiently and are difficult to find when surrounded by taller bottles and items. Use a small spring-tension curtain rod (\$3) as a simple shelf. It's easy to install and strong enough to support the spices.

Racks for canned goods

Use those leftover closet racks as cabinet organizers. Trim the racks to length with a hacksaw and then mount screws to the back side of the face frame to hold the racks in place. The back side of the rack simply rests against the back of the cabinet. Now you can easily find your soup and check the rest of your inventory at a glance.





Cookware organizer

Most kitchen base cabinets lack vertical storage space for big, flat cookware like cookie sheets and pizza pans. To provide it, just remove the lower shelf, cut a vertical panel of plywood and fasten it at the cabinet bottom with furniture braces and at the top with a strip of wood. Drill holes for the adjusting pins to match the original locations and trim the shelf to length.

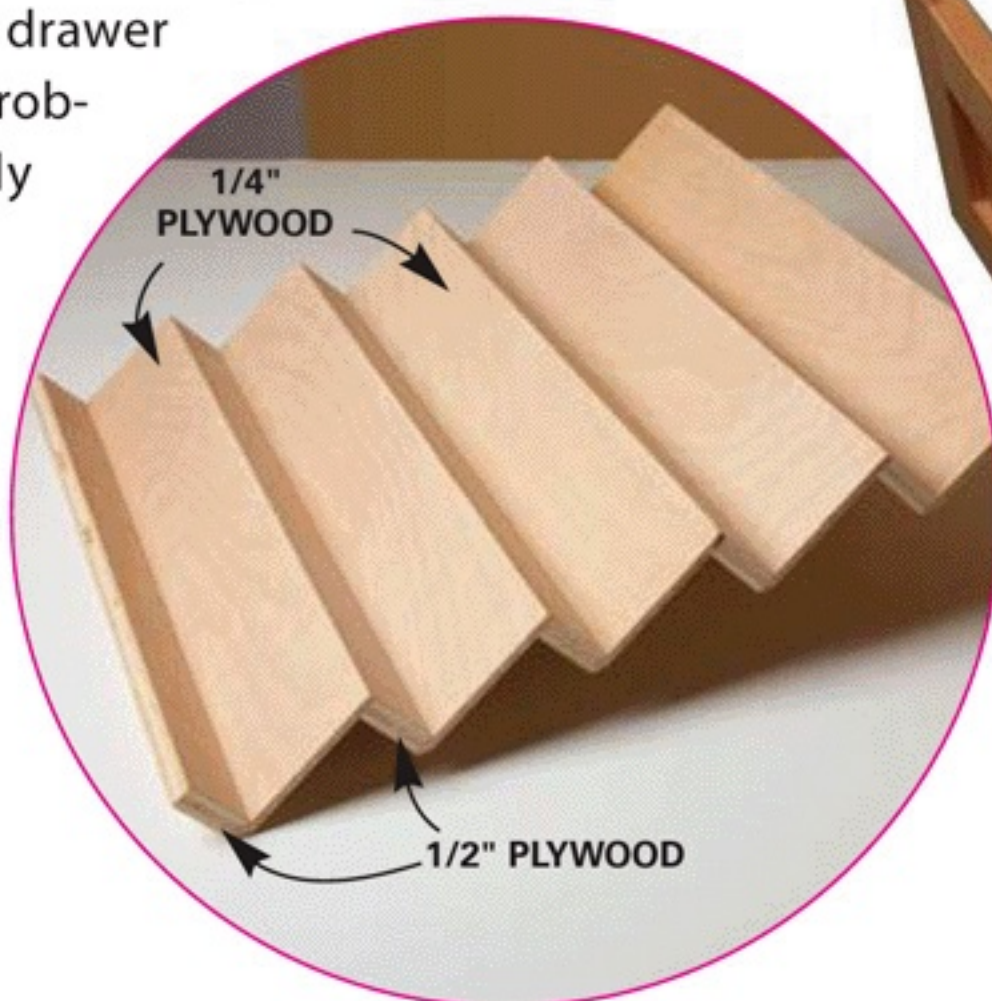
Measuring cup hang-up

Free up drawer space by hanging measuring cups inside a kitchen cabinet. Position and mount a wood strip so that the cups will hang between the shelves and allow the door to close completely. Mount a second strip for your measuring spoons, then screw in cup hooks on both strips.



Thyme saver

If your spices are jammed into a drawer with only the tops visible, this nifty rack that slips neatly into the drawer will solve the problem. And it only takes an hour to build. Make it with scraps of 1/4-in. and 1/2-in. plywood.





Wine glass molding

T-molding designed for wood floor transitions makes a perfect rack for stemware. Just cut it to length, predrill screw holes and screw it to the underside of a shelf. For a neater look, use brass screws and finish washers. Prefinished T-molding is available wherever wood flooring is sold. A 4-ft. section costs about \$28.

T-MOLDING

FINISH
WASHER

Charger hideaway

Nothing clutters up a space more than the spaghetti heap of cords and plugs needed to recharge all those cell phones and other electronic toys. Create a discreet charging station with a small bread box and place a power strip inside. Drill a hole in the back to run the cord to the receptacle. Plug in your power-hungry devices and close the door for an orderly desktop or kitchen counter.



STORAGE & ORGANIZING IN THE KITCHEN

Flat cookware organizer

It's frustrating to dig through a cabinet jam-packed with baking sheets, cake pans, pizza pans and cutting boards all stacked on top of one another. Transform the cabinet by removing the shelf and screwing in short sections of wire shelving to create vertical dividers. Now you can easily see where everything is located, and slide out just what you're looking for.



Cabinet door bag binder

Here's a handy way to keep paper bags organized and out of the way. Screw cup hooks to the inside of a cabinet door and stretch two screen-door springs (\$2 at home centers) between them. Tuck your bags behind the springs and pull them out as you need them.



Storage & organizing in the bathroom

Bathroom shelving unit

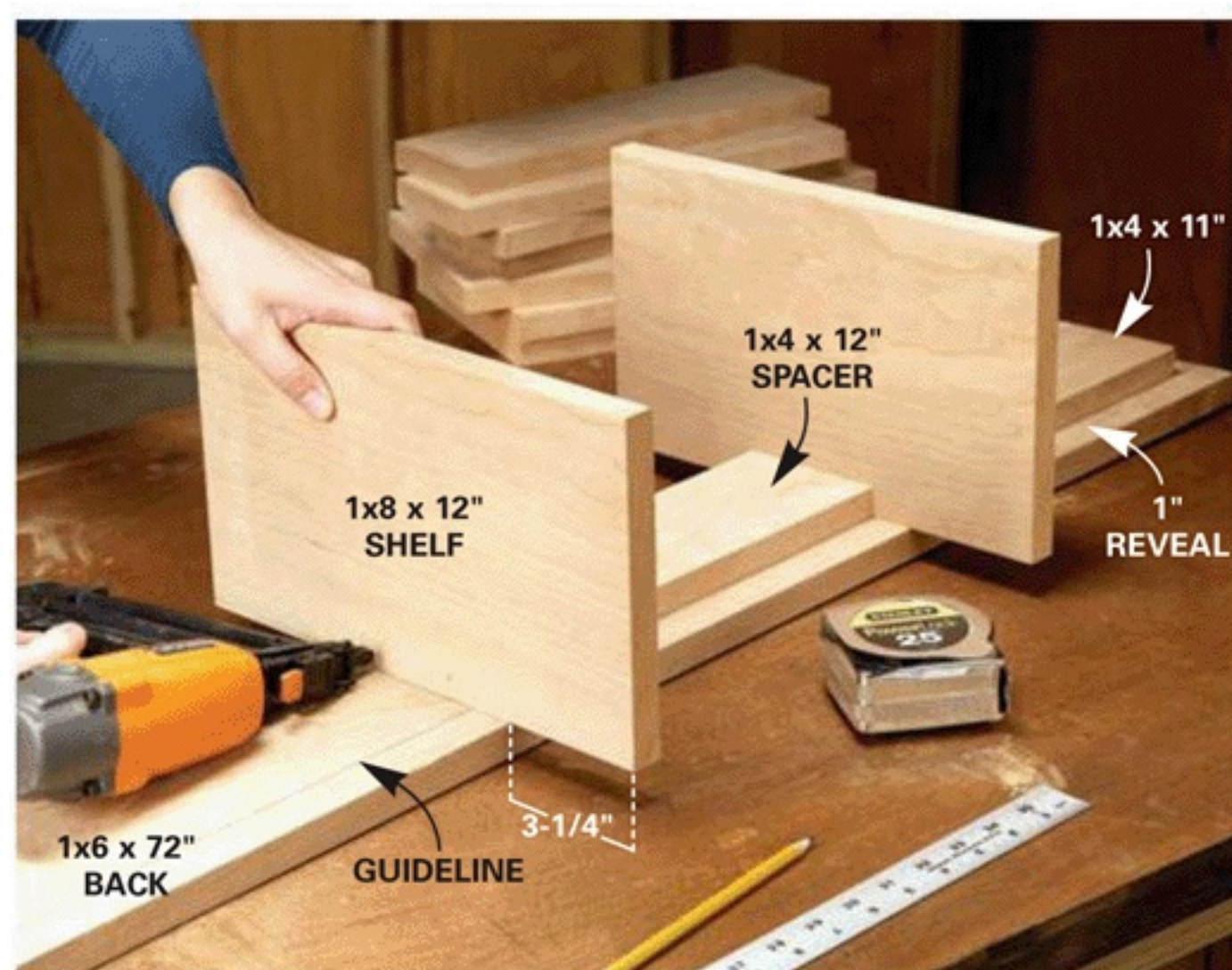
In a small bathroom, every single square inch counts. These shelves make the most of wall space by going vertical. The version shown here, made of cherry, cost about \$100. But you can build one for \$50 or less if you choose a more economical wood like oak or pine. All you need is a 6-ft. 1x4, a 6-ft. 1x6 and a 6-ft. 1x8.

Cut the middle spacers and the shelves 12 in. long. Cut the bottom spacer 11 in. long to allow for a decorative 1-in. reveal. Cut the top spacer to fit (the one shown was 7-1/4 in.). Measure 1 in. from one edge of the backboard and draw a guideline for the shelves and spacers along its length. Nail the bottom spacer in place, leaving a 1-in. reveal at the bottom edge.

Center the first shelf by measuring 3-1/4 in. in from the edge of the backboard and nail it in place. Work your way up the backboard, alternating between spacers and shelves (Photo 1).

On the back side, use a 1/8-in. countersink bit to drill two holes, one at the top and one at the bottom of each spacer. Drill two holes spaced 1 in. from each side of the backboard into each shelf ledge. Drive 1-1/4-in. drywall screws into each hole (Photo 2).

Paint or stain the assembled unit. If you'd like to clearcoat it, use a wipe-on poly or spray lacquer—using a brush would be really tough. Mount the unit on the wall with two 2-1/2-in. screws and screw-in drywall anchors (E-Z Ancor is one brand). Drive the screws where they won't be seen: right below the bottom shelf and right above the top shelf.



1 Nail the spacers and shelves in place, starting at the bottom and working your way up. Place the bottom spacer 1 in. from the lower edge of the backboard.



2 Strengthen the shelves by driving screws through the backboard into the shelves and spacers. Drill screw holes with a countersink bit.

Behind-the-door medicine cabinet

The biggest challenge in installing a recessed cabinet is finding unobstructed stud cavities in an open wall. The wall behind the door is usually open, but make sure that pipes, ducts and wiring don't get in the way. To choose the location for the cabinet, begin by finding the studs with a stud finder. Hold the cabinet to the wall at the best height and mark the cabinet near one side of a stud. Find the exact

location of that stud by sawing through the drywall until the blade is stopped (Photo 1). Use the cuts to define one cabinet side, and draw the cabinet outline.

Cut out the drywall and then cut off the exposed stud (Photo 2). Add the framing, then screw the cabinet to the framing (Photo 5). Add trim around the edges if necessary to conceal the rough drywall edges.



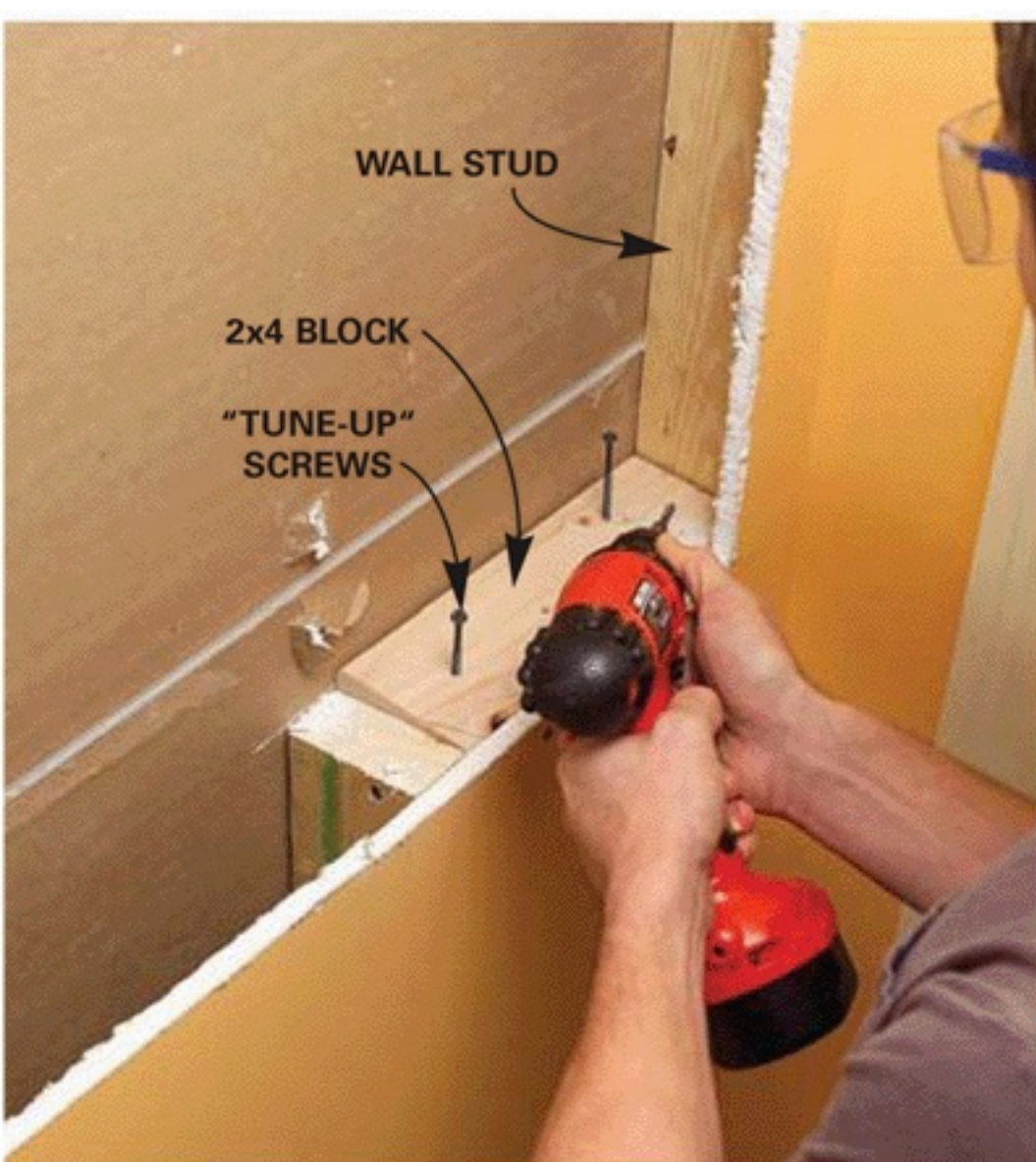
Before you cut a full-size hole in the wall, cut a 6 x 6-in. hole and shine a flashlight inside to check for obstructions.



1 Outline the inset medicine chest to fall against a stud on one side and cut out the opening with a drywall saw.



2 Cut the intermediate stud flush with the drywall on the back side. Push it sideways to release the drywall screws on the back side and remove the stud.



3 Screw blocking to adjacent studs at the top and bottom of the opening. Drive temporary "tune-up" screws into the block to help position it.



4 Cut and tap in vertical backing flush with the drywall edge, then toe-screw it to the blocking.



5 Slip the cabinet into the opening and anchor it with pairs of 2-in. screws. Add trim if needed.

Hidden toothbrush organizer

If you keep your toothbrushes in the medicine cabinet stacked on a shelf, they probably fall out when you open the door. If you cut notches in the cabinet shelves, you'll solve this annoying nuisance. Use a rotary tool along with a woodcutting bit and sanding drum.



Razor holder

Keep your razor from falling into the tub with this simple holder. Cut a 3-in. length of 1-in. PVC pipe with a handsaw. Cut two 1/8-in.-wide notches in the pipe. Strap the pipe to your wire shower caddy with two plastic tie straps hooked in the notches. Drop the razor into the pipe; the blade will catch on the edges of the pipe, keeping the razor off the floor.



Quick-grip electric toothbrush holder

Most toothbrush holders aren't big enough for electric toothbrushes. They end up falling out of the holder or taking up too much room on the vanity. Here's a clever storage idea: Make a holder for them using large grip-type clips (the kind you normally use for brooms or garden tools, available at hardware stores and home centers for \$3.50 a pair). Mount the clips on your medicine chest or on a piece of wood that you can hang on the wall. The clips work great to keep your toothbrushes secure!



Glass shower shelf

Tired of the clutter of shampoo and conditioner bottles along the rim of your tub? This tempered safety glass shelf on a cable shelf bracket is an easy solution. The cable shelf bracket requires only two screws for support. If studs aren't located in the right positions, use toggle bolts to anchor the shelf brackets. The glass hangs on the cables. The cable shelf brackets (No. CSB5B) are available online from expodesigninc.com and cost \$21 per pair. Order a tempered glass shelf from a local glass company. The 3/8-in.-thick, 12-in.-deep shelf shown here cost \$64.

Mount a shelf above your tub to store towels, shampoo and conditioner.



Bathroom storage goof

Here's a frustrating blunder that can happen when you install a medicine cabinet and overhead light fixture. If you mount the overhead light too low, you may not be able to open the medicine cabinet's door! Be sure to measure and test for adequate clearance before installing the light. Or avoid the issue altogether and install sconce lights on both sides of the medicine cabinet.

PVC curling iron holsters

Hate the messy look of curling irons lying on the vanity or the toilet tank? Here's a tip for you. Use hook-and-loop tape to attach 5-in. lengths of 2-in.-diameter PVC pipe to the vanity door to hold the curling irons. Do the same thing with 3-in. pieces of 1-1/2-in.-diameter pipe to hold the cords. Just measure your curling irons to see how long your "holsters" need to be. Let your curling irons cool before you stow them away.





Magnetic toothbrush holder

Do your toothbrushes end up lying on a wet, messy vanity? Here's a clever solution:

Mount neodymium ("rare earth") magnets on a Corian mounting strip with Super Glue. Glue the strip to the wall with Super Glue or silicone caulk.

To make the mounting strip, cut a Corian threshold (\$12 at tile stores) with a miter saw or jigsaw. Neodymium magnets are available from kjmagnetics.com (888-746-7556) and other Internet suppliers. Shown here are 1/2-in. x 2-in. x 1/8-in. magnets, grade N42 (\$3.50 each). You can double them up if you need more holding power.

Note: Neodymium magnets are incredibly strong but break if handled roughly. Order several more than you need—shipping is expensive. Also, don't handle neodymium magnets if you wear a pacemaker, and never leave them next to your computer. For more safety information, see the "Neo Mag Safety" link at kjmagnetics.com.



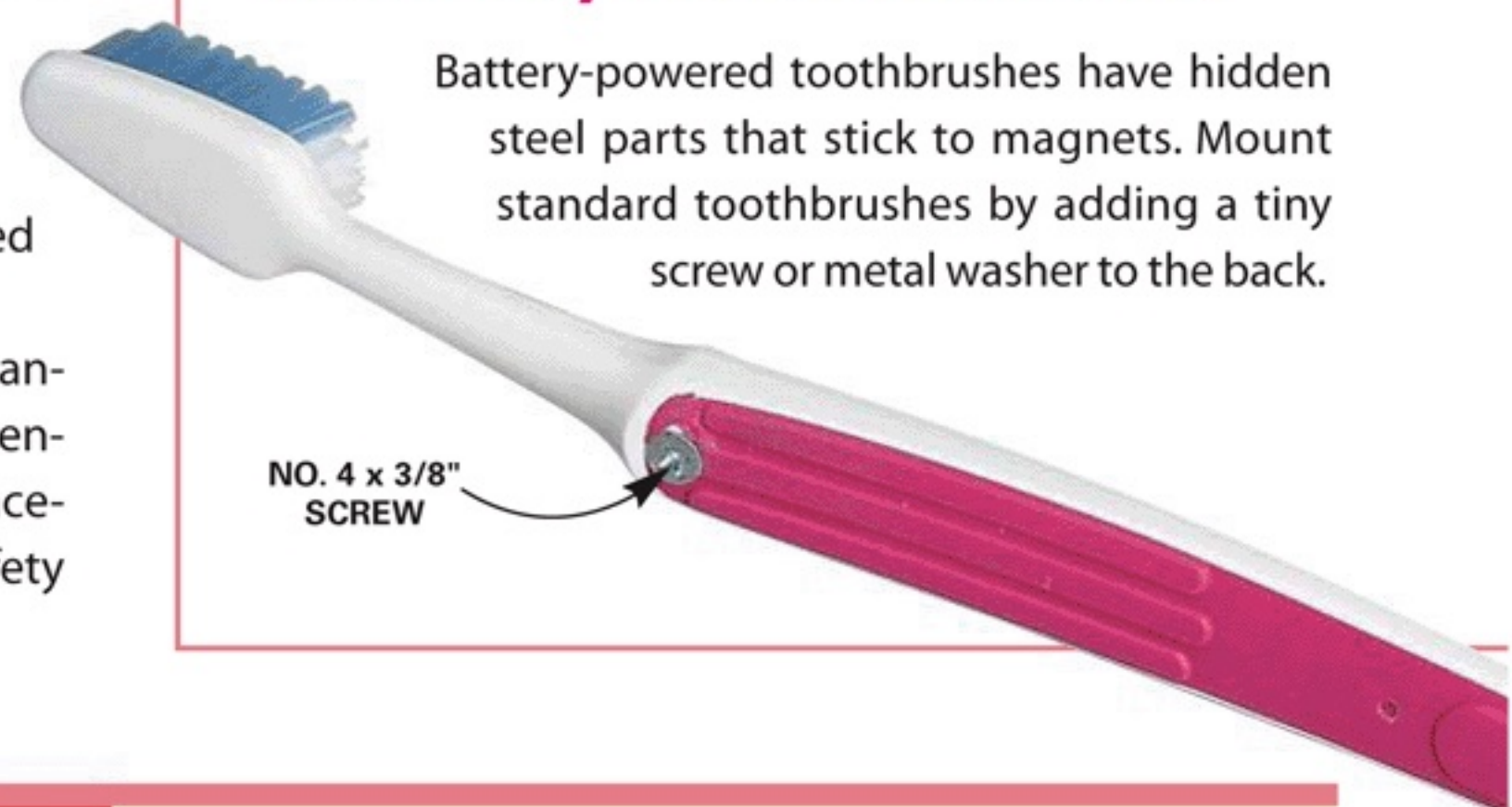
1 Mark the position of the magnets and glue them on the mounting strip, orienting the magnets so they attract each other.



2 Glue the mounting strip to the wall with Super Glue, hot-melt glue or silicone caulk.

Make any toothbrush stick

Battery-powered toothbrushes have hidden steel parts that stick to magnets. Mount standard toothbrushes by adding a tiny screw or metal washer to the back.

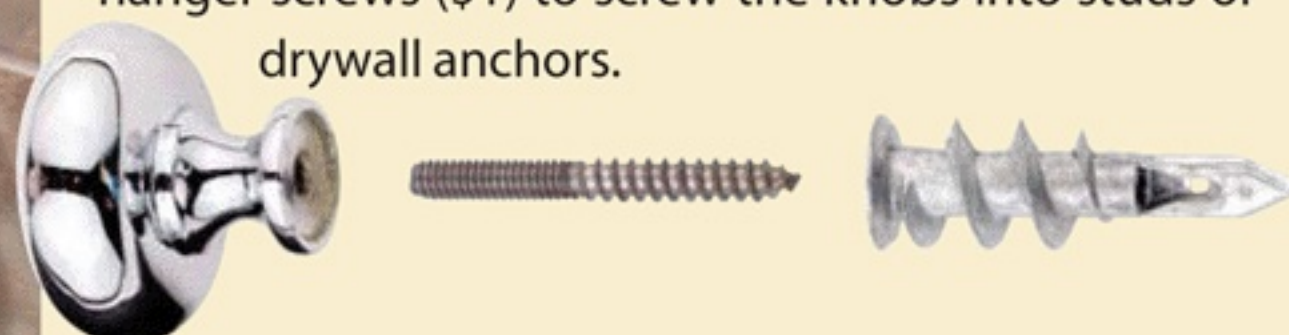


NO. 4 x 3/8"
SCREW



His-and-hers shower shelves

If you need more than shampoo and a bar of soap in the shower, here's how to provide space for all your vital beauty products: Get a couple of those shelves that are designed to hang from a shower arm and hang them on cabinet knobs. Use No. 8-32 hanger screws (\$1) to screw the knobs into studs or drywall anchors.



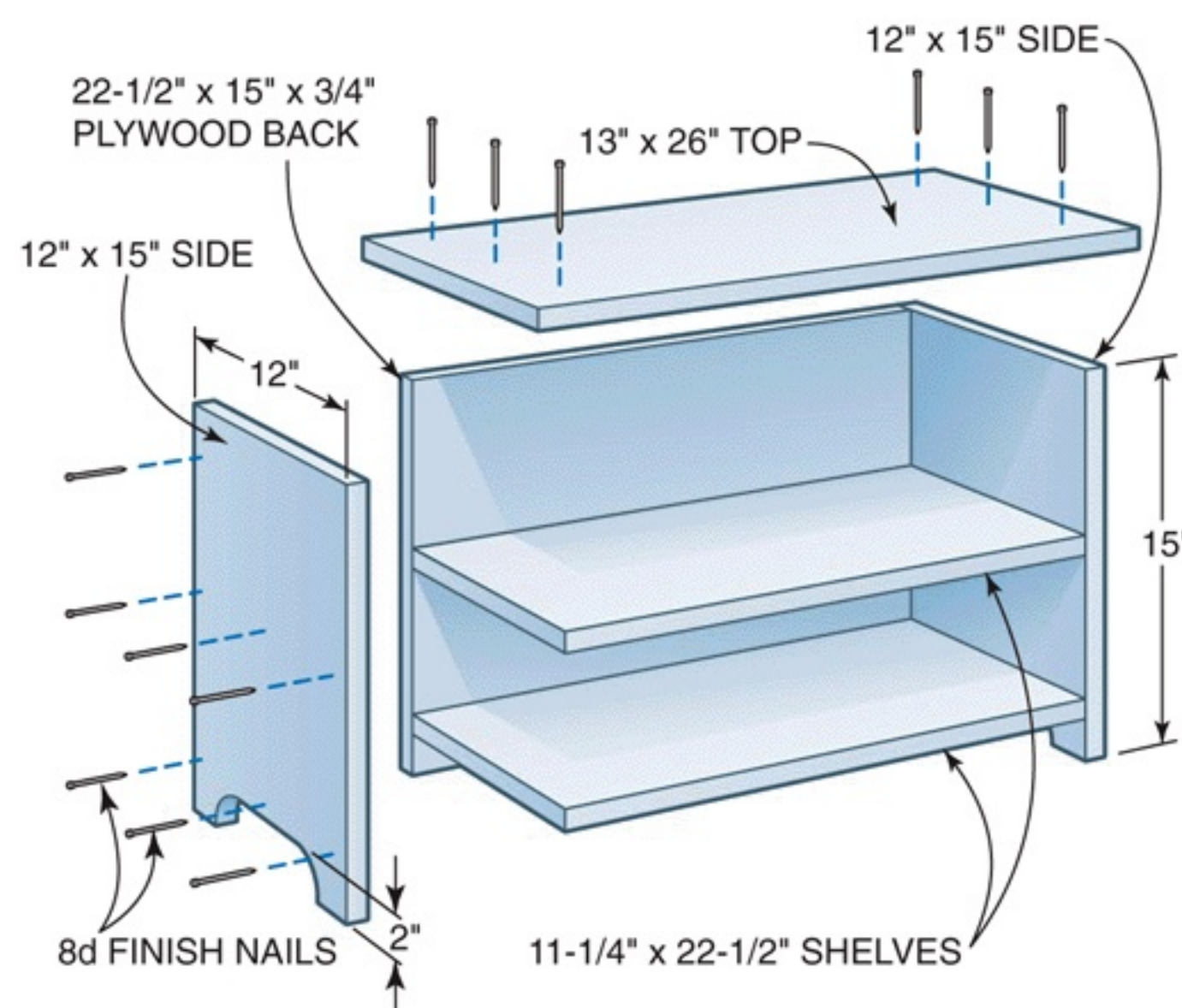
Storage & organizing for closets



Build this double-duty step stool from six pieces of 3/4-in. plywood.

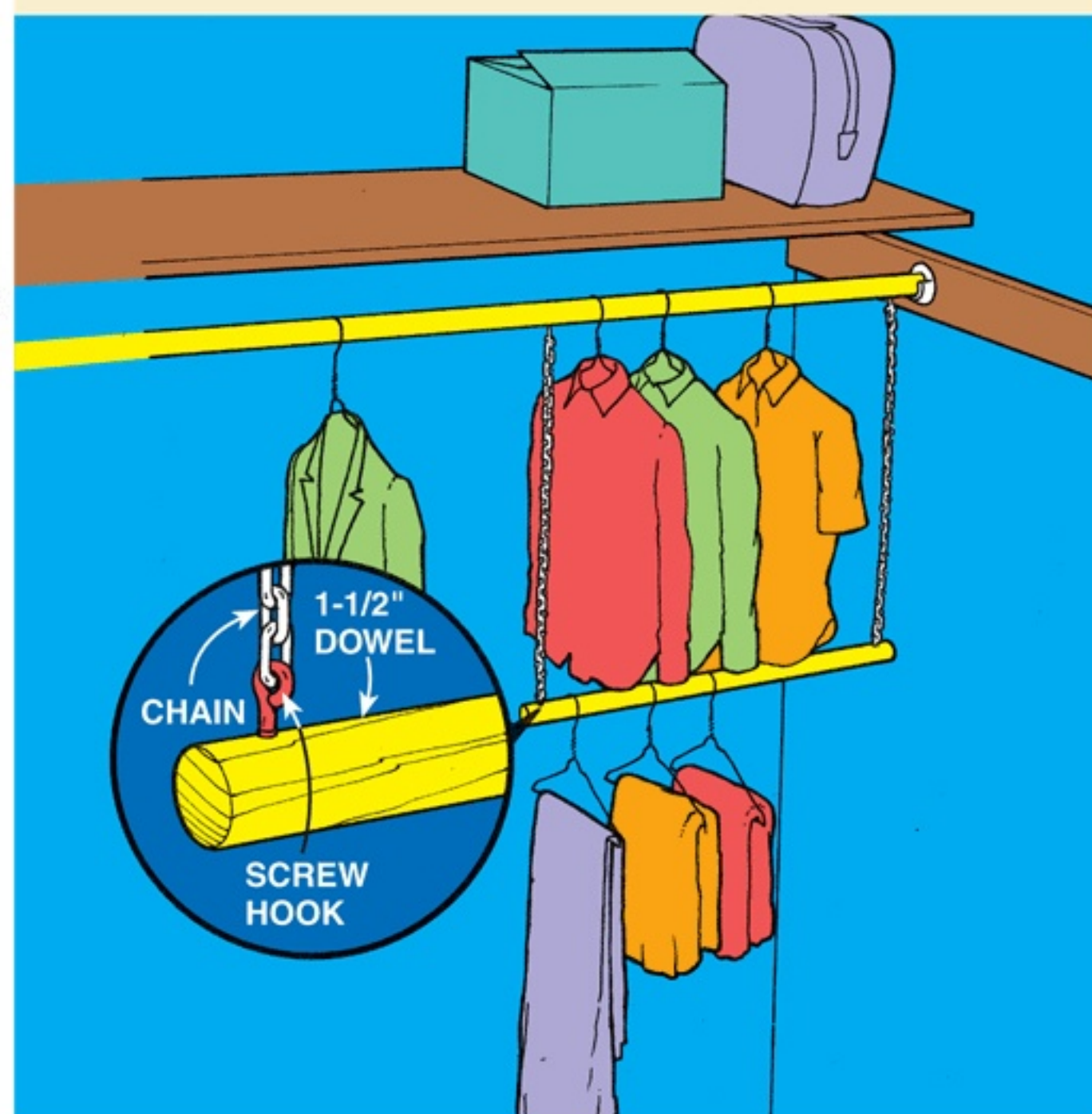
Shoe-storage booster stool

Build this handy stool in one hour and park it in your closet. You can also use it as a step to reach the high shelf. All you need is a 4 x 4-ft. sheet of 3/4-in. plywood, wood glue and a handful of 8d finish nails. Cut the plywood pieces according to the illustration. Spread wood glue on the joints, then nail them together with 8d finish nails. First nail through the sides into the back. Then nail through the top into the sides and back. Finally, mark the location of the two shelves and nail through the sides into the shelves.



Trapeze clothes hanger

Here's a quick way to add another clothes rod in a closet. It's especially useful in a child's closet, because you can easily adjust the height to accommodate the changing wardrobe of a growing child. Use lightweight chain attached to both the upper and lower rods with screw hooks. Squeeze the screw hooks closed with pliers.



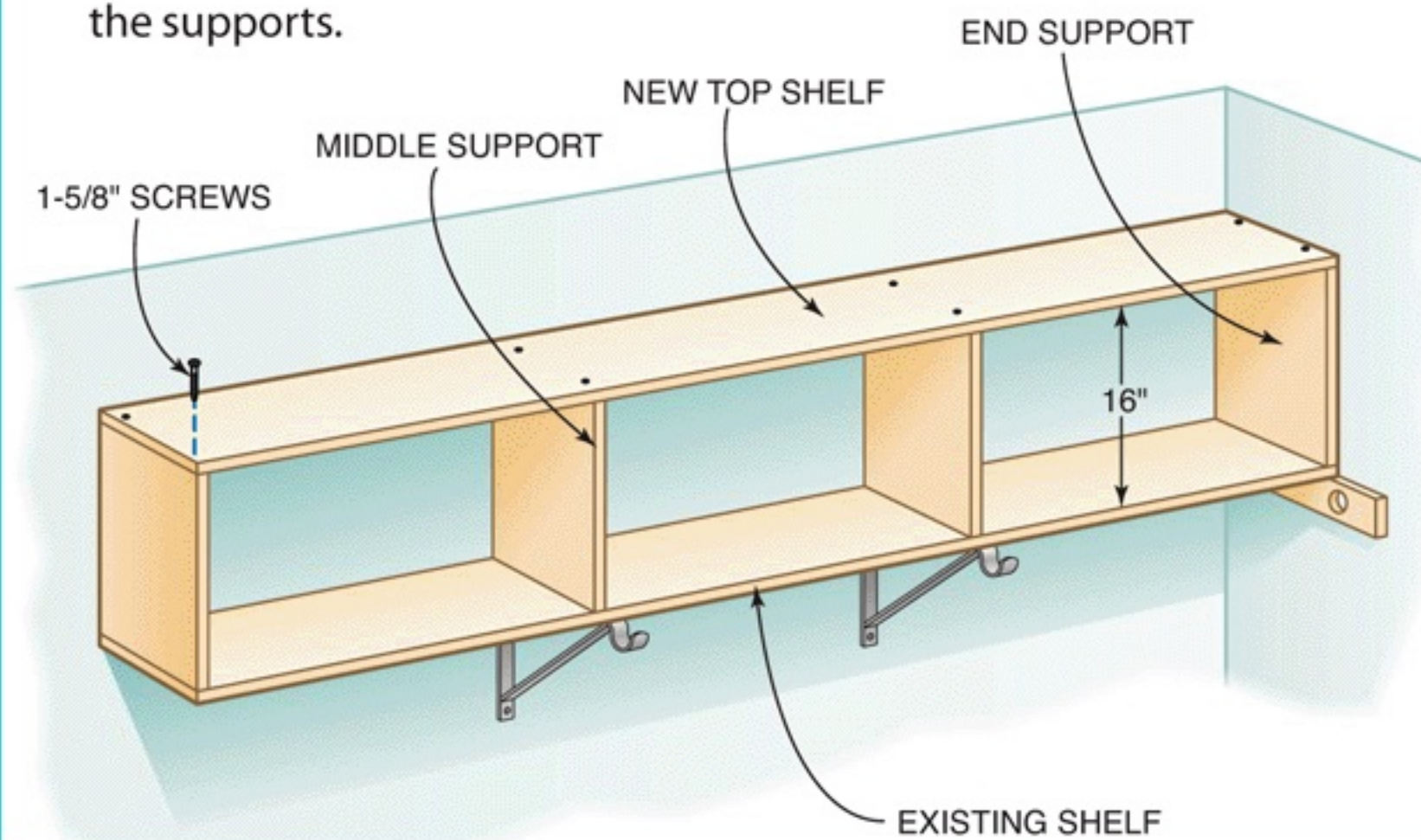
Accessory clip-up

Create the perfect hangers for soft items like hats and gloves using a length of metal or plastic chain and binder clips. Squeeze the metal handles to free them from the clips, slip them through the chain links, then reattach the clips. You'll have a neat hangout for all your gear.



Two-story closet shelves

There's a lot of space above the shelf in most closets. Even though it's a little hard to reach, it's a great place to store seldom-used items. Make use of this wasted space by adding a second shelf above the existing one. Buy enough closet shelving material to match the length of the existing shelf plus enough for two end supports and middle supports over each bracket. Twelve-inch-wide shelving (about \$9 for an 8-ft. length) is available in various lengths and finishes at home centers and lumberyards. These supports were cut at 16 in. long, but you can place the second shelf at whatever height you like. Screw the end supports to the walls at each end. Use drywall anchors if you can't hit a stud. Then mark the position of the middle supports onto the top and bottom shelves with a square and drill 5/32-in. clearance holes through the shelves. Drive 1-5/8-in. screws through the shelf into the supports.



Glove and cap rack

Make a simple rack for gloves and caps on the back of your closet door. Straighten a coat hanger and feed it through the middle screw eye mounted to the door. Put as many clip clothespins on the wire as you need, then bend a loop in the wire at each end, around the outer screw eyes.



Closet nook shelves

Salvage the hidden space at the recessed ends of your closets by adding a set of shelves. Wire shelves are available in a variety of widths. Measure the width and depth of the space. Then choose the correct shelving and ask the salesperson to cut the shelves to length for you or cut them yourself with a hacksaw. Subtract 3/8 in. from the actual width to determine the shelf length. Buy a pair of end mounting brackets and a pair of plastic clips for each shelf.

Double-duty luggage

Put your luggage to use when it's not on vacation. Fill it with off-season clothes and stash it under the bed.



Tie, scarf and belt organizer

Clean up a messy closet by hanging your ties, belts and scarves on this 3-in-1 closet organizer. All you need is a 2 x 2-ft. piece of 1/2-in. plywood (\$10 to \$15), a wooden hanger and a hook (the one shown was taken from a hanger).

This organizer is 12 in. wide and 16 in. tall, but yours can be taller or narrower. To get a nice curve at the top, use the wooden hanger as a guide. Center it, trace the edge and cut it out with a jigsaw. Make a pattern of holes, slots and notches on a piece of paper and transfer it to your board. Use a 2-in. hole saw to cut the holes, making sure the board is clamped down tightly to keep the veneer from chipping (Photo 1). Use a jigsaw to cut out the side notches. To cut the slots, punch out the ends with a 5/8-in. Forstner drill bit (or a sharp spade bit) to prevent chipping, and then use a jigsaw to finish cutting out the center of each slot (Photo 2).

Sand the wood and apply several coats of sealer or poly to smooth the edges so your scarves and ties don't snag (this is the most time-consuming step). Using a 1/4-in. round-over bit with a router makes the sanding go faster. Drill a small hole into the top of the organizer for your hook, squeeze in a bit of epoxy glue to hold it and then screw it in.



1 Drill scarf holes with a 2-in. hole saw. Clamp the plywood tightly against a piece of scrap wood to prevent chipping as the hole saw exits the plywood.

2 Use a 5/8-in. Forstner drill bit or a sharp spade bit to punch out the ends of the slots, and then finish cutting them out with a jigsaw.



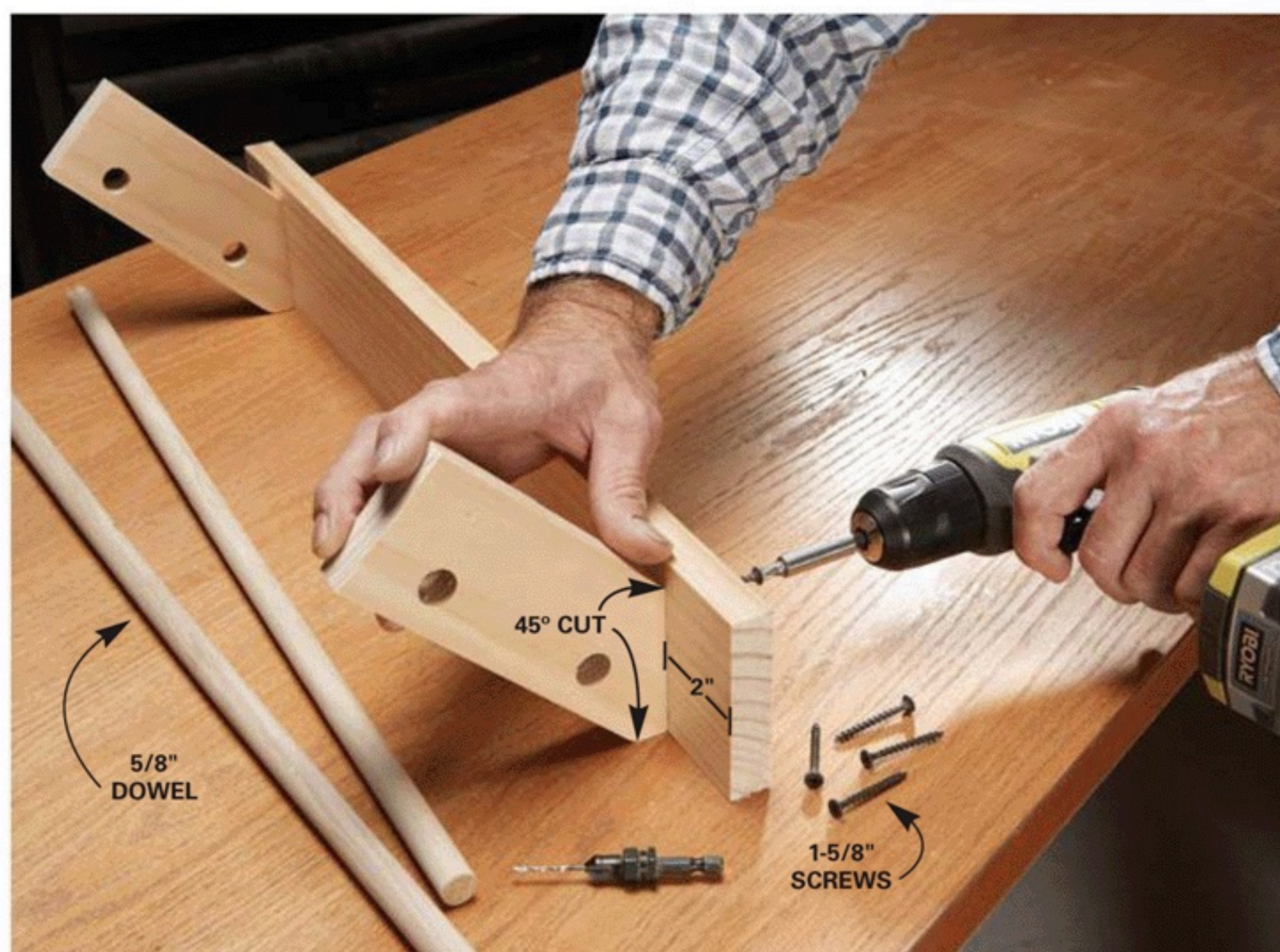
1 Clamp the 1x3 support to a piece of scrap wood as you drill the holes to prevent the wood from splintering.

Shoe ladder

Without constant vigilance, shoes tend to pile up into a mess next to entry doors. Untangle the mess with a simple, attractive shoe ladder that keeps everything from boots to slippers organized and off the floor.

Cut and drill the dowel supports (Photo 1), then screw them to 1x4s (Photo 2). Cut the 1x4s to fit your shoes and the available space—an average pair of adult shoes needs 10 in. of space. Nail or glue the dowels into the dowel supports, leaving 2 in. (or more) extending beyond the supports at the end to hang sandals or slippers.

Apply finish before you mount the shoe ladder to the wall. Screw the shoe ladder to studs or use heavy-duty toggle-bolt style anchors to hold it in place.



2 Predrill through the back of the 1x4 into the 1x3 supports, then glue and screw the pieces together.

STORAGE & ORGANIZING FOR CLOSETS

Wire shelving "corral"

If you store your gift wrap propped against the wall in the hall closet, some of the rolls can fall over and get lost behind other things or end up wrinkled or torn. To solve this dilemma, use plastic shelf clips and a small section of wire shelving to create a wrapping paper "corral." The rolls stay neatly organized and are easy to reach. You could corral other tall items too, like hockey sticks, bats and umbrellas.



S-HOOK

S-hook hang-up

Turn any closet into a useful hang-up storage space by adding S-hooks to wire shelving. This provides tidy storage for mops, brooms and other cleaning tools.

Temporary valet rod

When you need temporary clothes-hanging space around the house, keep an extra shower tension bar handy. Put it between the jambs in the laundry room door on heavy laundry days. Or, use it in the bedroom closet to pack for trips or stick it in the closet opening in the guest room/den so overnight guests can hang up their clothes. It's a quick and easy way to gain an extra closet!



Storage & organizing in the garage

Hang-it-high helper

This classic handy storage hint makes the most of hard-to-reach areas in your garage. Use this homemade extension pole to hang items in high or awkward spots. Attach a spring clamp to the end of 1-1/2-in. plastic pipe, and use the crotch between the handles of the clamp to lift items on or off a hook or nail.



Up, up and away

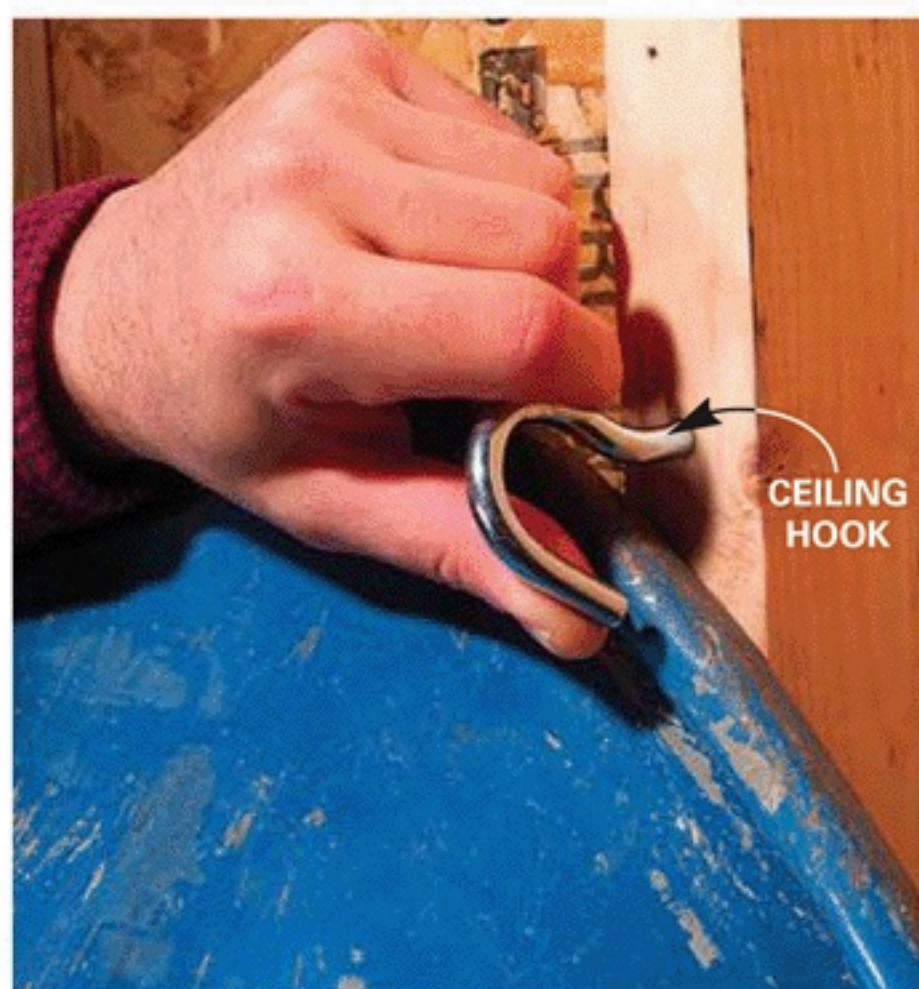
Put those joist spaces to use with this simple storage idea. Fasten eye screws to the joists and then cut lengths of chain to keep odd lengths of trim and pipe out of the way but easy to find. Open one side of the eye screw with pliers to slip the chain in place. Make the chain a bit longer for easy future expansion.



Wheelbarrow rack

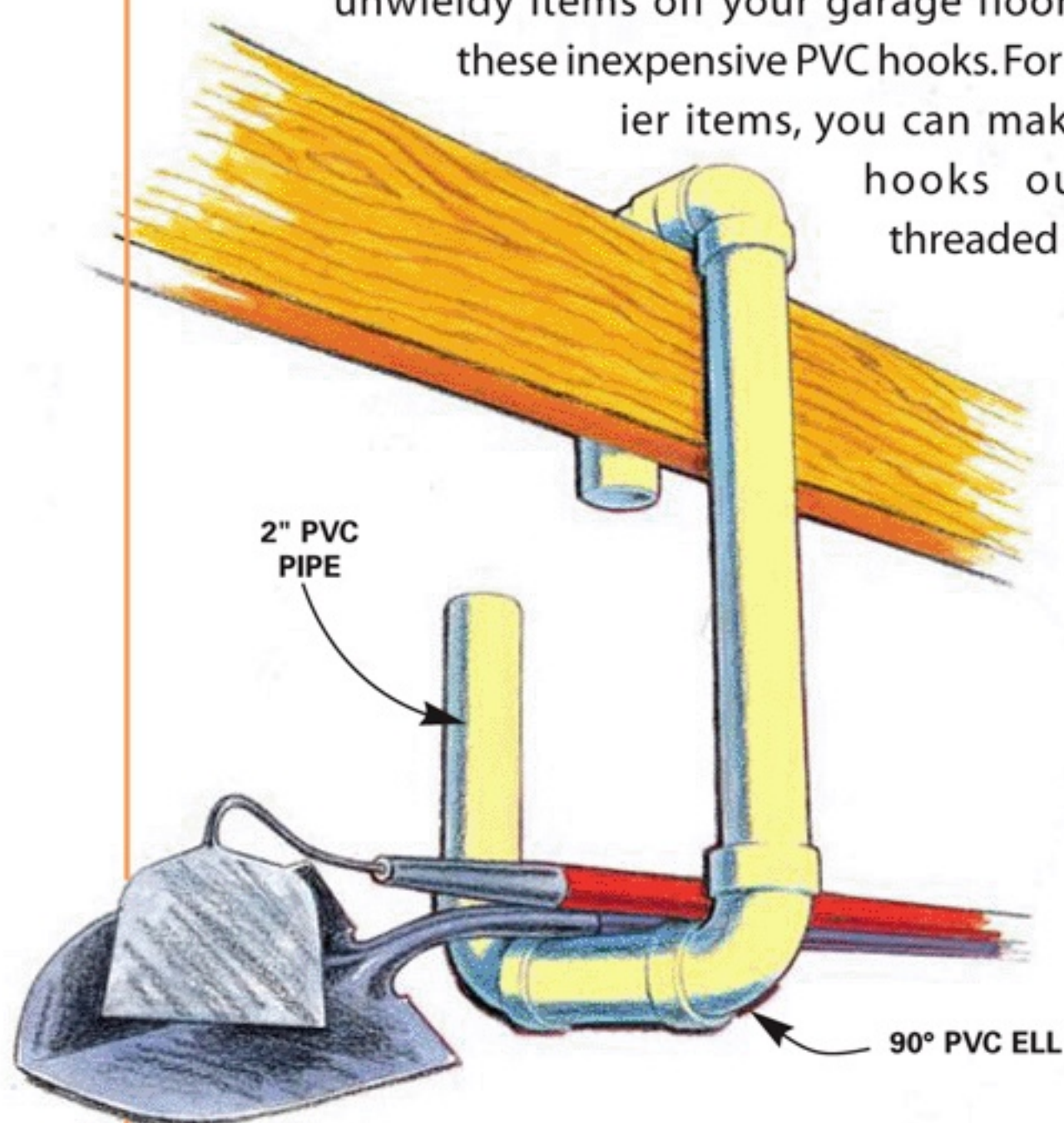
Hang your wheelbarrow on the garage wall to free up floor space. Center a 2-ft. 1x4 across two studs, 2 ft. above the floor. Tack it into place, then drive 3-in. screws through metal mending plates and the 1x4, into the studs. Leave about 3/4 in. of the plate sticking above the 1x4 to catch

the rim. Rest the wheelbarrow on the 1x4 as shown, and mark the studs 1 in. above the wheelbarrow bucket. Drill pilot holes and screw ceiling hooks into the studs. Twist the hooks so they catch on the wheelbarrow lip and hold it in place.



Custom storage hooks

Get ladders, tree pruners, bikes, 2x4s and other unwieldy items off your garage floor with these inexpensive PVC hooks. For heavier items, you can make the hooks out of threaded pipe.



Save your lawn products

Leave a bag of fertilizer or weed killer open for long and it'll soak up moisture from the air and won't go through a spreader. Even grass seed could use an extra layer of protection from a moisture-wicking concrete floor. Place opened bags of lawn products in large resealable plastic bags (\$1 at discount stores). The products will be free of clumps or pests when you need them.



Elastic-cord tool holder

Use elastic cords to make a handy tool organizer for chisels and other hand tools. Fasten one end of the cord to a 1x8 with an electrical staple, lay the cord straight without stretching it, then staple the other end. Add staples every 3 in. to create holders, leaving the staples just loose enough so the cord can still move. Then fasten the 1x8 to the wall.



2-minute tool rack

One way to get rid of clutter in your storage shed or garage is to screw 16-in. scrap 2x4s at a slight upward angle to each side of a wall stud. They will hold a wide variety of yard tools.

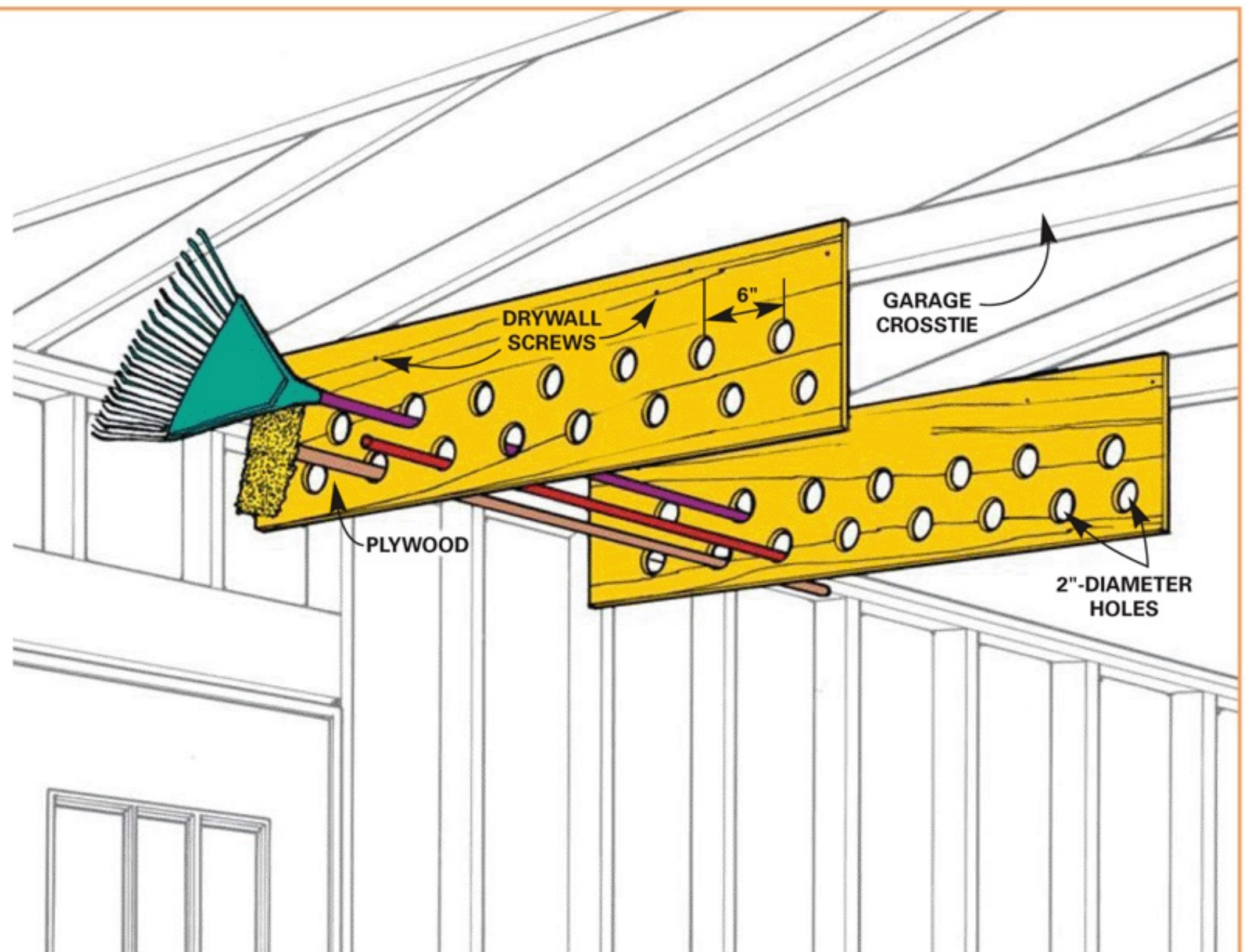


Upside-down shelves!

Here's some neat and fast storage for your garage's upper regions. Bolt together a set of inexpensive metal shelves (about \$12 at a home center) and attach them upside down to the ceiling joists with lag bolts. The spacing between shelves is completely adjustable. Hang the shelves so they're easy to reach, or set them high so you won't bonk your head. Trim the shelf posts to just the right height with tin snips.

Overhead storage for garden tools

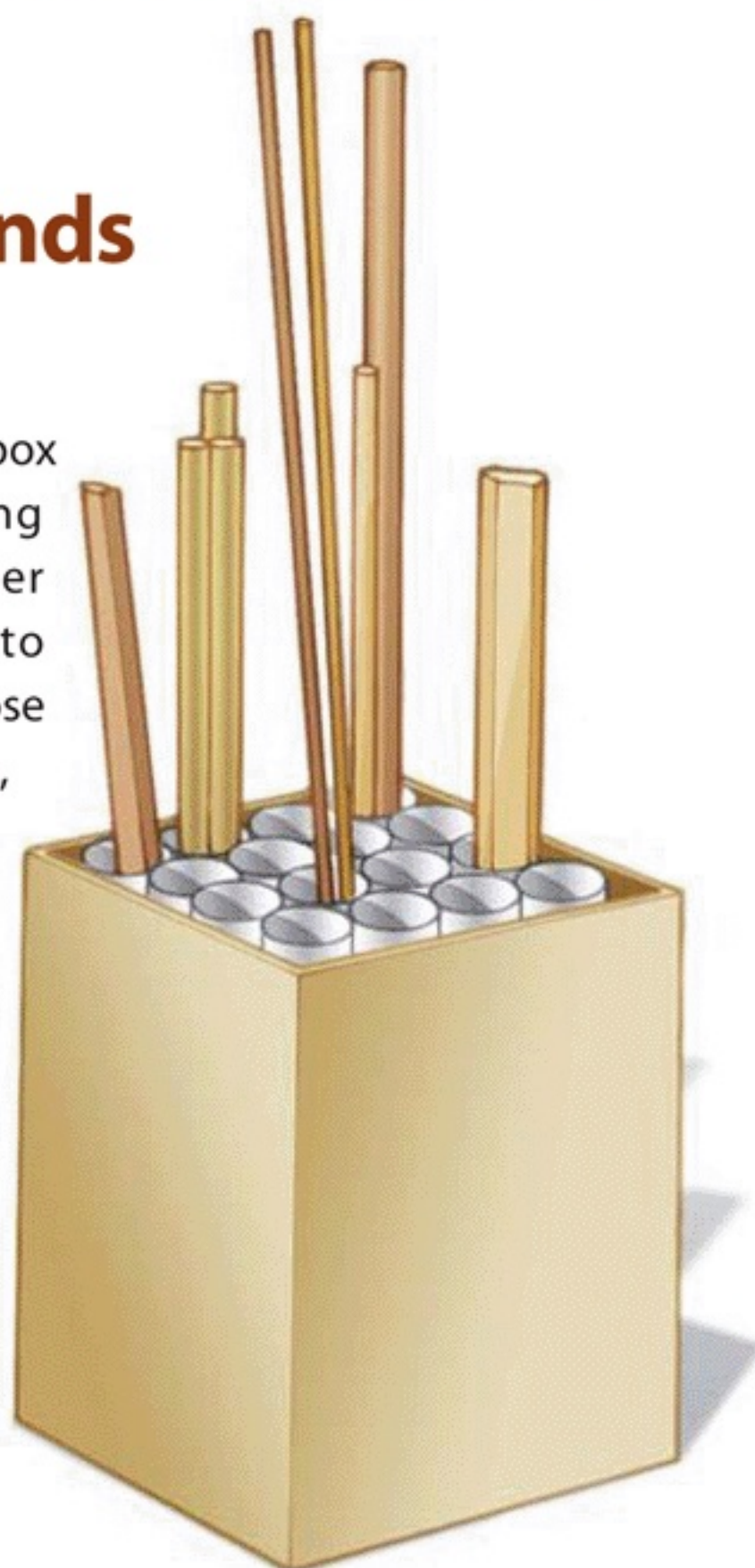
Rakes, shovels, brooms and other long-handled tools seem to be in the way no matter how they're stored in the garage. Here's a rack that works: Cut two pieces of plywood about 12 in. x 48 in. and drill matching 2-in. holes in each, spaced about 6 in. apart. Mount the racks on crossties below your garage roof rafters.



STORAGE & ORGANIZING IN THE GARAGE

Odds-and-ends storage

Fill a sturdy cardboard box with sawed-off shipping tubes or scraps of larger PVC pipe. Then use it to store and organize all those short pieces of molding, pipe and dowels.



Lawn tool carrier

An old golf bag with a cart makes a perfect holder for garden tools. The large wheels make it easy to haul the tools over long distances and rough terrain.



PVC tool holder

Build this PVC rack to store your tools on the wall. Use a jigsaw to cut a 1-1/4-in.-wide notch down the length of a 2-in.-diameter PVC pipe. Cut several 3-1/2-in.-long sections with a hacksaw or miter saw, and drill two 1/8-in. holes behind the notch. Use 1-1/4-in. drywall screws to attach these pieces to a 2x4 screwed to the wall.



Stay-put balls

Keep sport balls off the floor and out of the way by resting them in flowerpot drip trays (80¢ at home centers). Screw the trays down to an inexpensive shelving unit. The balls will stay put.



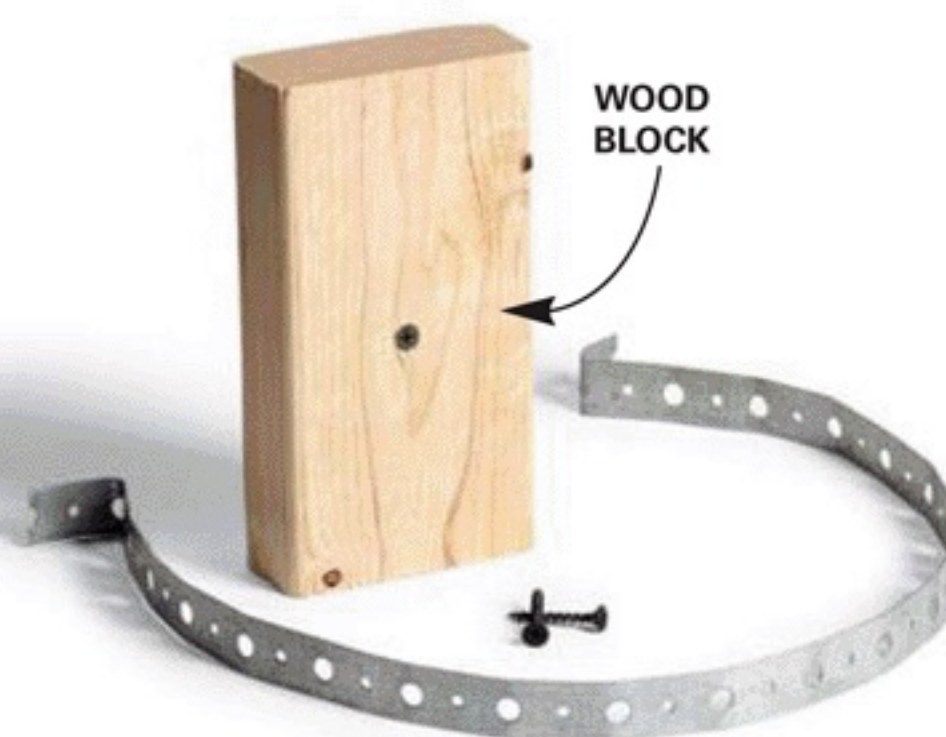
Garage ceiling track storage

If you store stuff in big plastic storage bins and you need a place to put them, how about the garage ceiling? Screw 2x2s to the ceiling framing with 3-1/2-in. screws spaced every 2 ft. Use the bins as a guide for spacing the 2x2s. The lips on the bins should just brush against the 2x2s when you're sliding the bins into place. Then center and screw 1x4s to the 2x2s with 2-in. screws. The garage ceiling is a perfect place to store light and medium-weight seasonal items like holiday decorations and camping gear.



Storage tubes

Cardboard concrete-forming tubes are inexpensive (\$7 at any home center) and provide a great place to store baseball bats, long-handled tools and rolls of just about anything. Rest the tubes on a piece of 2x4 to keep them high and dry. Secure each tube to a garage stud with a plumbing strap.



STORAGE & ORGANIZING IN THE GARAGE



Build two identical brackets, then screw them both to ceiling joists with 1/4 x 2-in. lag screws. Space the brackets so the ladder will extend at least 1 ft. beyond the end of each one.

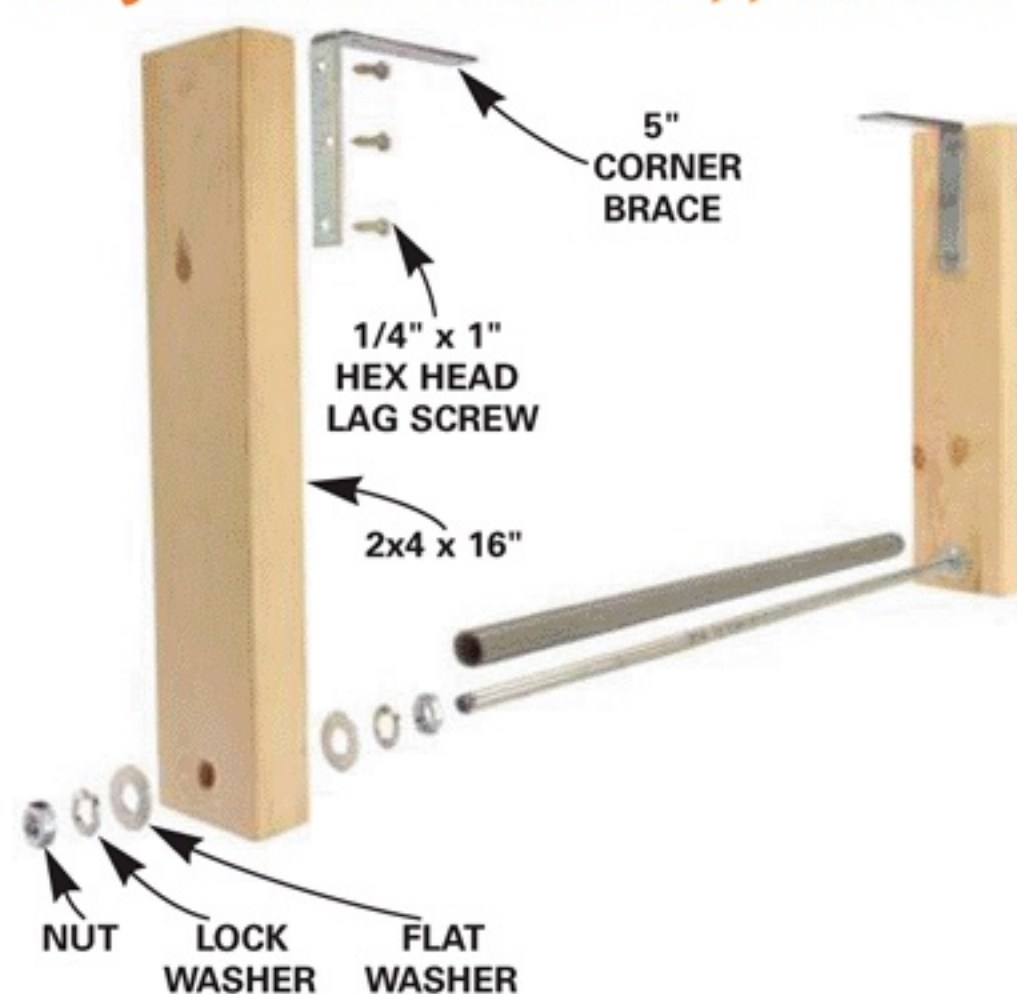
Suspended extension ladder

It's always most convenient to hang an extension ladder on brackets on a wall. But unfortunately that wipes out all other storage potential for that wall. To save that valuable wall space, here's a pair of 2x4 suspended brackets so a ladder can be stored flat along the ceiling.

Simply slide one end of the ladder into one bracket, then lift and slide the other end into the other bracket. Most people will need to stand on something solid to reach the second bracket. The 2x4 bracket sides are 16 in. long with 5-in. corner braces lag-screwed into the top for attachment to the ceiling joist (Figure A).

The bracket base is a 1/2-in. x 24-in. threaded steel rod (\$2.75) that extends through 5/8-in. drilled holes on the bracket sides. It's held in place with flat/lock washers and a nut on each side of both 2x4 uprights. A

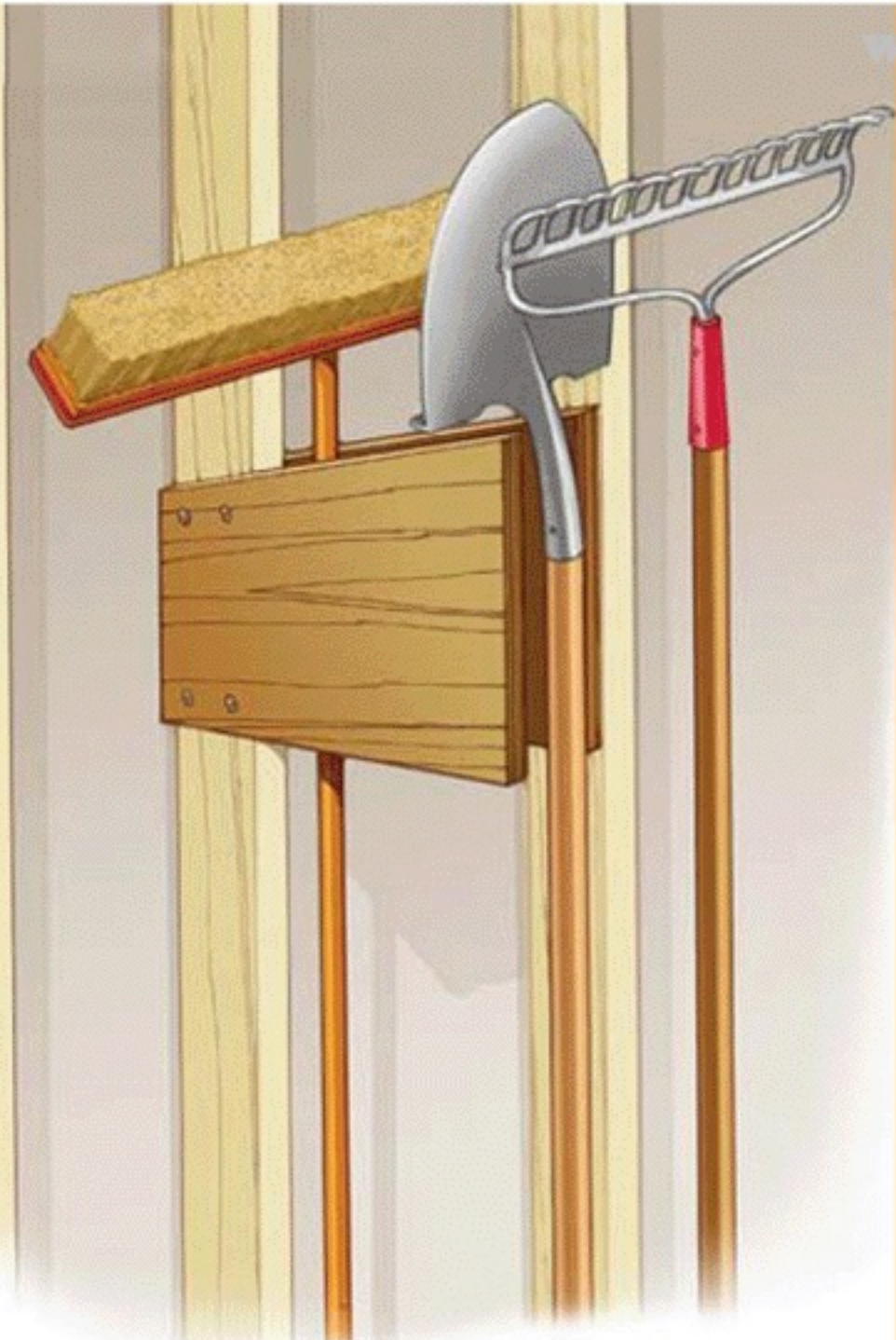
Figure A: Ladder support detail



3/4-in. x 18-in.-long piece of PVC conduit pipe surrounds the rod for smooth rolling action when you slide the ladder in and out.

CAUTION

For extra security, wrap a Bungee cord around the ladder and one bracket.



Garage-wall tool holder

If you have lots of rakes, shovels, brooms and garden tools cluttering your garage, but not a lot of wall to hang them on, try this. Cut two 16 x 16-in. pieces from 1/2-in. plywood and screw them to a wall stud at a slight upward angle. Then slide in your tools.

Hang-it-all hooks

Those plastic hooks that plumbers use to support pipes make convenient hangers for just about anything. They're strong, cheap (25¢ to \$1 each) and come in a range of sizes. Find them in the plumbing aisle at home centers and hardware stores.



Lattice rack

Plastic lattice works well for storing long lengths of miscellaneous pipe, trim, flashing and conduit. Just cut matching pieces, then screw 2x4 cleats to the ceiling and screw the lattice to the wall studs and cleats. Now you can quickly find those oddball leftovers instead of going to the hardware store and buying yet another piece.



Easy chair storage

Here's how to store your lawn and folding chairs so they're out of your way. Take two pieces of 1x4 lumber (any scrap lumber will do) and create some simple, cheap and useful brackets on the wall. Cut each board 7-3/4 in. long with a 30-degree angle on both ends. Fasten pairs of these brackets with three 2-in. screws to the side of the exposed wall studs, directly across from each other, and you've got a perfect place to hang your chairs.



Cord organizer

Elastic cords can quickly become a tangled mess. Find the one you need at a glance with this handy rack made from 3- or 4-in. PVC pipe. Just drill 1/2-in.-diameter holes in the pipe to match the slightly stretched lengths of your cords. Keep it in your garage, trunk or shop, out of the reach of children.

STORAGE & ORGANIZING IN THE GARAGE



Cord and hose hooks

Hanging electrical cords and hoses on thin hooks or nails can cause kinks and damage the sheathing and wires. Use pieces of 3-in. ABS plastic plumbing pipe to make simple, inexpensive hangers.

Screw 3-in. end caps to a 2x6 with two 1-5/8-in. screws. Fender washers under the screw heads keep them from pulling through the plastic. Then cement on 8-in. lengths of end-capped pipe. These "hooks" are very strong!



Bike racks

Tired of that darn bike hanging in your way? Build this movable bike rack from a 2x4 and a pair of bicycle hooks. Cut four 3-1/2-in. blocks, stack two on top of each other, and screw them together. Now screw them on the end of a 4-ft. 2x4 and repeat the process for the other side. Drill a hole in the middle of the stacked blocks and screw in the bicycle hooks. Lay the rack across your garage ceiling joists, and hang your bike from the hooks. When you need to get behind the bike, simply slide the entire rack out of the way.

Closet pole and shelf brackets can also keep your bikes up and out of the way of car doors and bumpers. Just screw the brackets to the wall studs. Line the pole carriage with self-stick hook-and-loop strips so it won't scratch your bike frame.



Garage organizer

Cut an old hose into 7-in. pieces, slit them, and nail them to the wall to make good holders for handled tools in the garage.



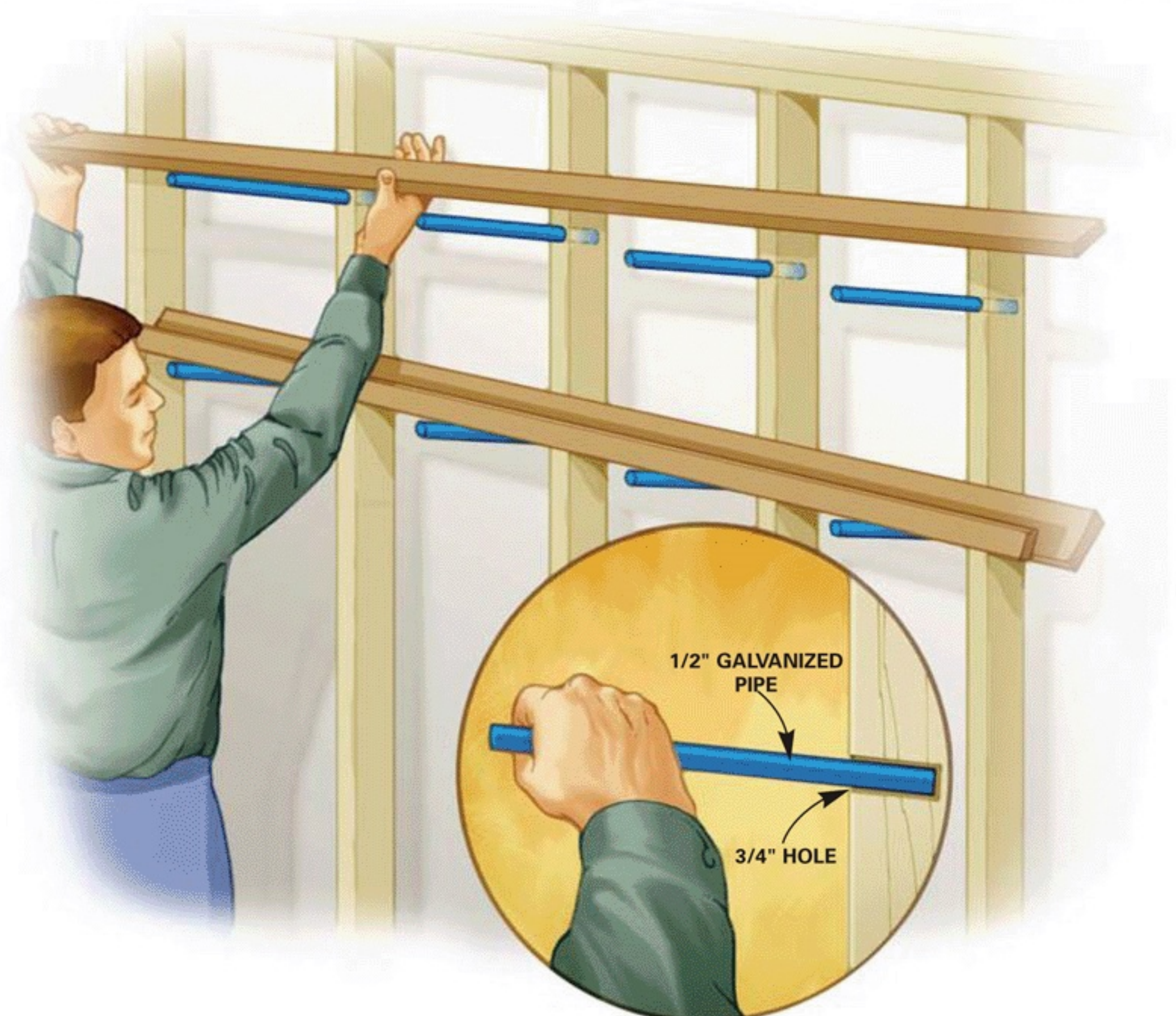
Double-duty shelf brackets

Shelf brackets designed to support clothes hanger rods aren't just for closets. The rod-holding hook on these brackets comes in handy in the garage and workshop too. You can bend the hook to suit long tools or cords. Closet brackets cost about \$3 each at home centers and hardware stores.

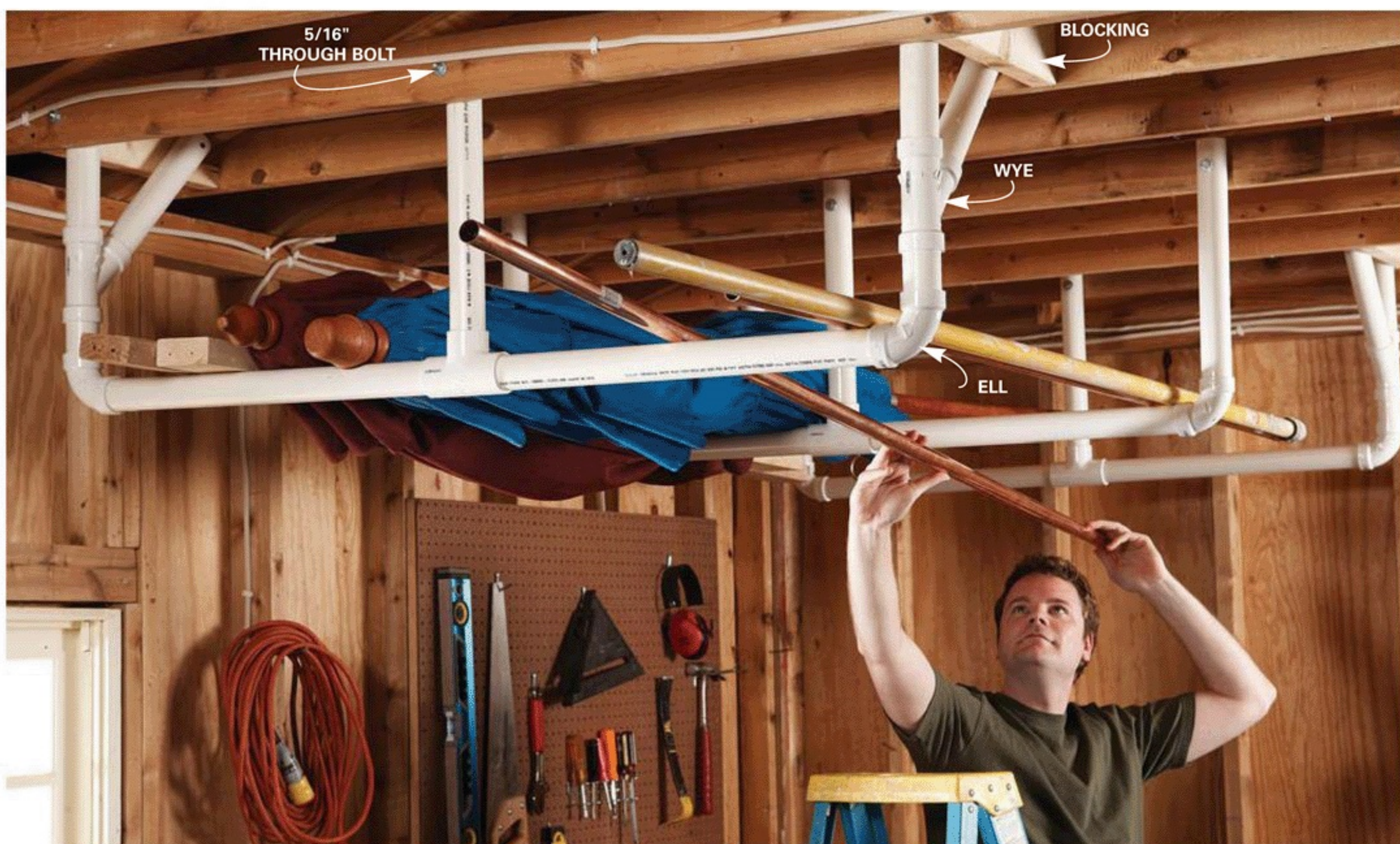


Easy storage rack

Use this storage rack for lumber and other long stuff. Simply drill a line of 3/4-in. holes about 1-1/2 in. deep in adjacent studs, angling the holes slightly downward. Then insert 15-in.-long sections of 1/2-in.-galvanized pipe. Keep the lowest pipes at least 6 ft. above the floor so you won't crack your skull on them.



STORAGE & ORGANIZING IN THE GARAGE



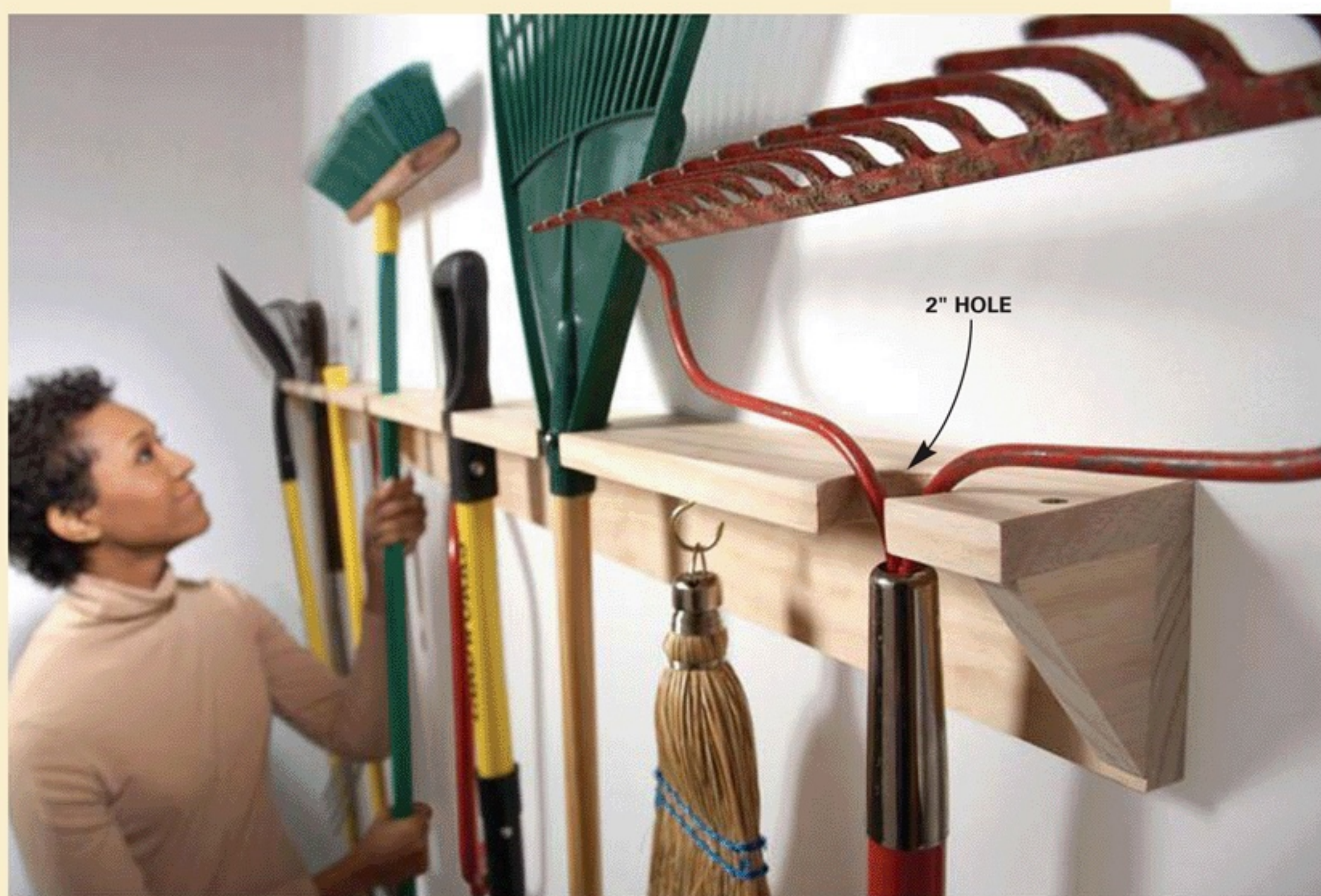
Overhead storage

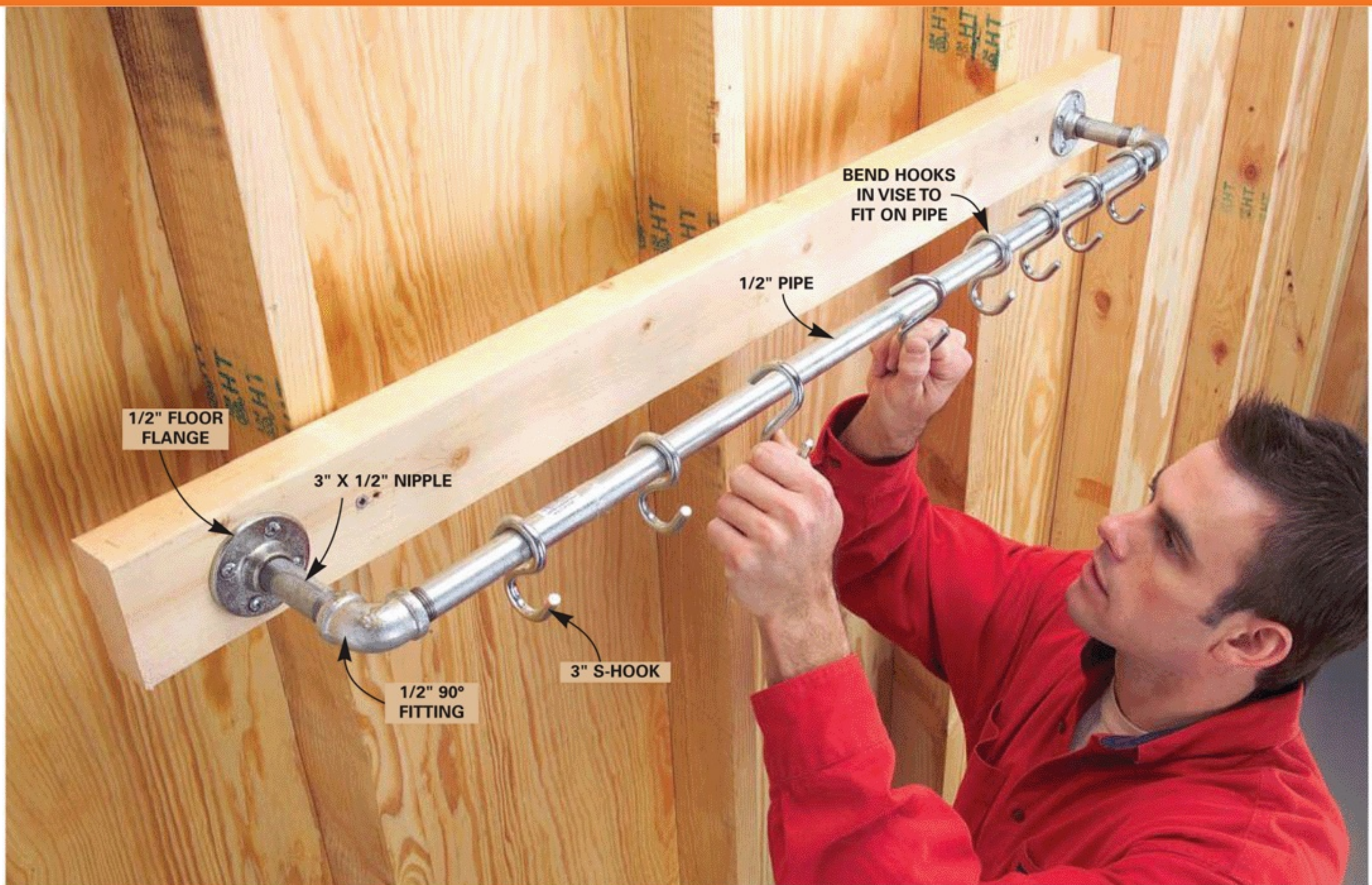
Stow bulky items overhead by cementing together a simple rack from 2-in. PVC pipes and fittings. Bolt the straight pipe to the ceiling joists to support heavy loads, and screw the angled

pieces from the “wye” connectors into the cross brace to stabilize the whole rack. The PVC’s smooth surface makes for easy loading and unloading.

Yard tool organizer

Create a simple long-handled tool hanger out of two 1x4s. On the first one, drill a series of 2-in. holes along the edge of the board. The trick is to center each hole about 1 in. from the edge. That leaves a 1-1/2-in. slot in the front that you can slip the handles through. Space the holes to accommodate whatever it is you’re hanging. Screw that board to another 1x4 for the back and add 45-degree brackets to keep it from sagging. If you wish, pound nails into the vertical board to hang even more stuff. No more tripping over the shovels to get to the rakes!





Heavyweight cord and tool hanger

Store a load of cords, air hoses, ropes and tools on this rugged rack. To build one, you'll need:

- One 3- or 4-ft. x 1/2-in. iron pipe threaded on both ends
- Two 3-in. x 1/2-in. pipe nipples
- Two 1/2-in. 90-degree pipe fittings
- Two 1/2-in. floor flanges
- Several 3-in. S-hooks
- Cable Clamps (\$25 for a 13-pack of medium-size clamps at home centers; cableclamp.com; 727-528-1000). Or you can just use leftover strips of plastic-sheathed electrical cable.

Assemble the pipe, elbows, nipples and floor flanges, then screw through the flanges to a horizontal 2x4 set at shoulder height on a garage or shop wall. Attach your S-hooks. If yours don't fit, clamp the hooks in a vise and bend open one end just enough to fit on the pipe after assembly. Now snap Cable Clamps on all your coils and hang them from the S-hooks.



Better extension cord storage

Here's how to wind up extension cords so they hang easily and don't get tangled. If you're one of those people who wraps cords around your hand and elbow, knock

it off! It permanently twists the cords and makes for a tightly wound pile of spaghetti that's bound to be tangled when you go to unwind it.



1 Wind the cord in big loops and plug the ends together.



2 Drop one of the outside loops.



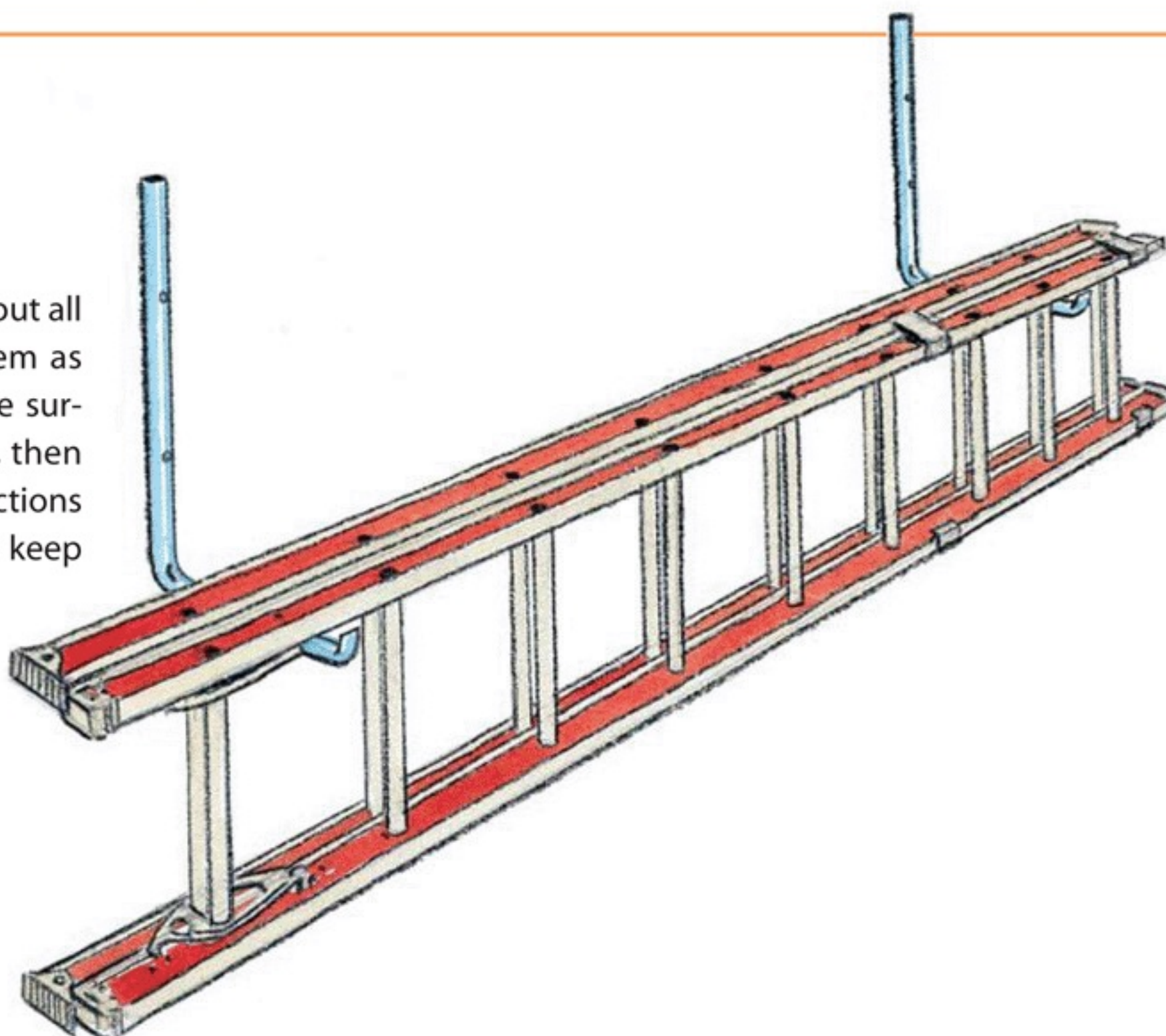
3 Wind the dropped loop a few times around the loops you're holding.



4 Stick the rest of that loop through the middle of the coil, give it a tug and hang the cord by its built-in hanging loop.

Lawn chair brackets

Don't throw away those old lawn chairs. Cut out all the right angles of the frames and use them as hanging brackets. The reinforced corners are surprisingly strong. Just drill holes for screws, then squeeze closed the ends of the horizontal sections in a vise. Bend these ends up about 1 in. to keep things from falling off the brackets.



Prevent home disasters



Turn off the water supply before going on vacation

Water damage from undetected plumbing leaks will quickly ruin ceilings, floors and walls, leading to repair bills in the thousands. This is especially true if you're away on vacation. Yes, such a leak is unlikely, but insurance companies report hundreds of these incidents every year. Look for the main valve near the water meter and turn it clockwise to close it. If it's stuck, leaks or doesn't turn on again, hire a plumber to replace it. The ice maker in your refrigerator may freeze up while you're gone, so shut it off too or thaw it with a hair dryer when you return.



Use metal tubing rather than plastic for ice maker supply lines

If you've had mice in your home, use a copper (type L) or braided stainless steel line rather than a plastic supply line for the ice maker in your refrigerator. Mice like to run behind refrigerators and occasionally chew holes in plastic lines, causing a leak that can ruin floors and ceilings before you detect it. Plastic tubes also can harden over time and crack. Find metal ice maker lines at home centers and wherever appliances are sold.

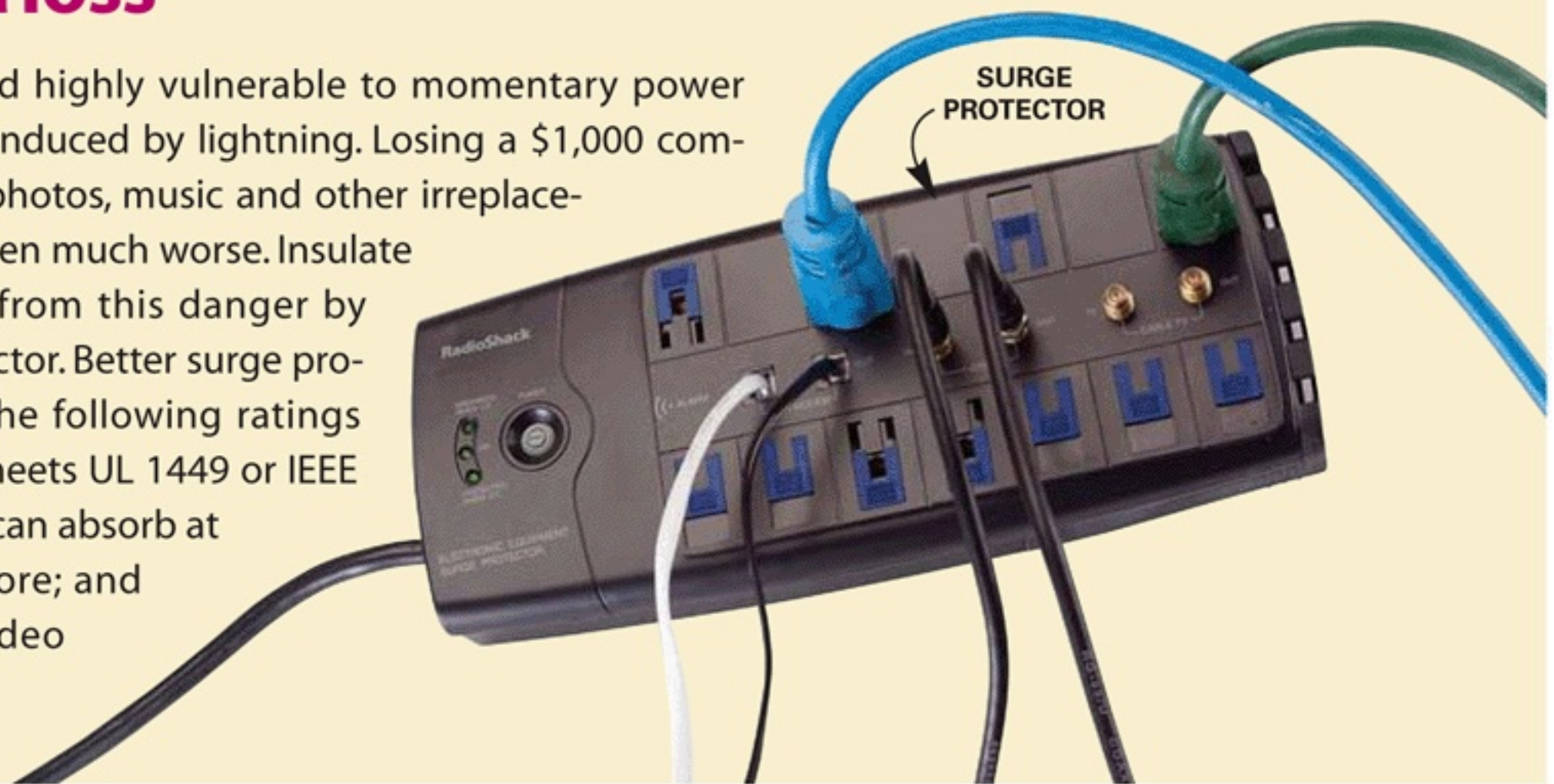
Add 6-ft.-long downspout extensions

A 1-in. rainfall drops about 650 gallons of water on an average roof. And your downspouts concentrate all that water in only a few spots. If dumped too close to the house, the water will undermine your foundation, causing it to leak, shift or crack—very expensive to fix. Downspout extensions will prevent most major problems, including wet basements, cracked foundation walls, and termite and carpenter ant infestations.



Install surge protectors to protect your microprocessors and prevent data loss

Computer chips are sensitive and highly vulnerable to momentary power surges, especially powerful ones induced by lightning. Losing a \$1,000 computer is bad enough, but losing photos, music and other irreplaceable stuff on your hard drive is often much worse. Insulate your valuable microprocessors from this danger by plugging them into a surge protector. Better surge protectors (\$40 and up) will have the following ratings printed somewhere on the box: meets UL 1449 or IEEE 587; clamps at 330 volts or lower; can absorb at least 100 joules of energy or more; and handles telephone lines and video cables as well.



Strap your water heater if you live in an earthquake-prone region

Earth tremors can tip water heaters and break the gas lines that lead to them, causing either water damage, or worse, an explosion and fire. Water heater straps can prevent this disaster. (They're required in California and other regions.) In earthquake-prone regions, you can find them at home centers and hardware stores for \$15. Otherwise, order them online. One source is amazon.com.

Buy no-burst hoses for your clothes washer



If your current hoses are more than five years old, replace them with no-burst hoses. The supply hoses to your clothes washer are always under pressure, just like the supply pipes in your water system. However, eventually the rubber will harden, crack and leak. If undetected, the leak can cause extensive water damage. An inexpensive solution is to buy no-burst hoses. These high-quality hoses are less likely to leak and they'll keep any leak from becoming a torrent. They cost less than \$20 a pair at home centers, hardware stores and appliance stores.

Trim trees around the house so dead branches won't crash down on the roof

Insurance companies get a flood of tree-related claims after major storms. You can't prevent all of these incidents, but many you can, if you trim out overhanging branches and dying trees just waiting to fall. Major tree trimming is dangerous and not a do-it-yourself project. Call in a tree service to trim all tall trees around your home every few years. Don't procrastinate. Spending a few hundred dollars now could save you several thousands in roof and rain damage later.

Test your sump pump before the beginning of the rainy season

The most common time for a sump pump to fail is the first heavy rainfall after months of not being used. The submerged or partially submerged portions of cast iron pumps can rust and seize. And they'll burn out when they switch on. Don't get caught with your pump down and the water rising. After a long dry (unused) spell, pour a bucket or two of water into the sump to make sure the pump kicks on.



Monitor foundation or wall cracks

Hairline cracks in a concrete foundation are normal, but cracks that continue to widen spell trouble. They'll eventually cause shifting and cracking in the walls above, tilt floors and move doors and windows so they won't open and close. The movement is glacially slow. To help you spot it, measure and record the gap size. Check it every few months. If the cracks widen, call in a foundation specialist ("Foundation Contractors" online or in the yellow pages) to assess the foundation. Solutions can cost hundreds of dollars, but the cost of ignoring the problem is greater. A major foundation fix can cost thousands.



Once a year, inspect your foundation for termite tunnels

Pull out your flashlight and walk around your home, examining the foundation, both inside and out, to inspect for termite tunnels. Much of the damage termites do is invisible, inside walls and floors. Take the time to look for tell-tale sawdust and tunnels, because termites can do major damage before you even know they're there. If you spot signs of termites, call in a professional exterminator.



Put splash pans under washers and water heaters to catch leaks

Once upon a time, water heaters and clothes washers always sat on concrete floors near drains, where spills and leaks wouldn't hurt anything. Now they often sit on framed wood floors, sometimes on the second floor, where spills, overflows, broken hoses or slow drips can cause stains, rot and other potentially expensive water damage. For about \$20, you can buy special pans at home centers and appliance dealers that catch slow leaks and mild overflows. Some have drain holes where you can connect a tube that leads to a floor drain. They won't stop burst water lines or massive overflows, but they're cheap insurance against water damage caused by minor spills and leaks.



7 common ways fires start

Cooking fires



Prevention

- Never leave the kitchen while something is cooking on the stove.
- Keep combustibles at least 3 ft. away from the cooktop. This includes curtains and wall hangings.

Tip: Post a reminder note near the range for a week or two until everyone gets the message.

The statistics:

**23%
of fires,
9% of
deaths**





Prevention

- Keep space heaters at least 3 ft. away from drapes, bedding and other flammables.
- Plug space heaters directly into outlets, not into extension cords.
- Don't use space heaters while sleeping.
- Empty wood-stove ashes in a metal container and store them outside away from combustibles for at least a week before dumping them into the trash.

- Have your chimney inspected and cleaned every year.
- Keep any and all combustible objects at least 5 ft. away from the stove or fireplace.

Tip: Establish a designated space heater zone in rooms where space heaters are used. The zone should be clear of blowing drapes and at least 5 ft. away from other combustibles.

The statistics:

**15%
of fires,
13% of
deaths**



Prevention

- Don't smoke in bed.
- Use large ashtrays on tables.
- Soak ashtrays under the faucet before throwing cigarette butts in the trash.

Tip: When nagging isn't doing the trick, it might be time to buy a sign like the one shown.

The statistics:

**5%
of fires,
23% of
deaths**



PREVENT HOME DISASTERS



Electrical fires

Prevention

- Replace extension cords that are undersized or frayed.
- Never run extension cords under rugs.
- Replace undersized cords with larger-gauged ones or plug appliances directly into outlets.
- Call an electrician to track down hidden problems causing frequently tripping circuit breakers.
- Call an electrician to open up and troubleshoot electrical boxes that have warm covers.
- Check all the light bulbs in your home to make sure bulb wattages don't exceed the fixture's recommended maximum.

The statistics:

**9%
of fires,
10% of
deaths**



Appliances

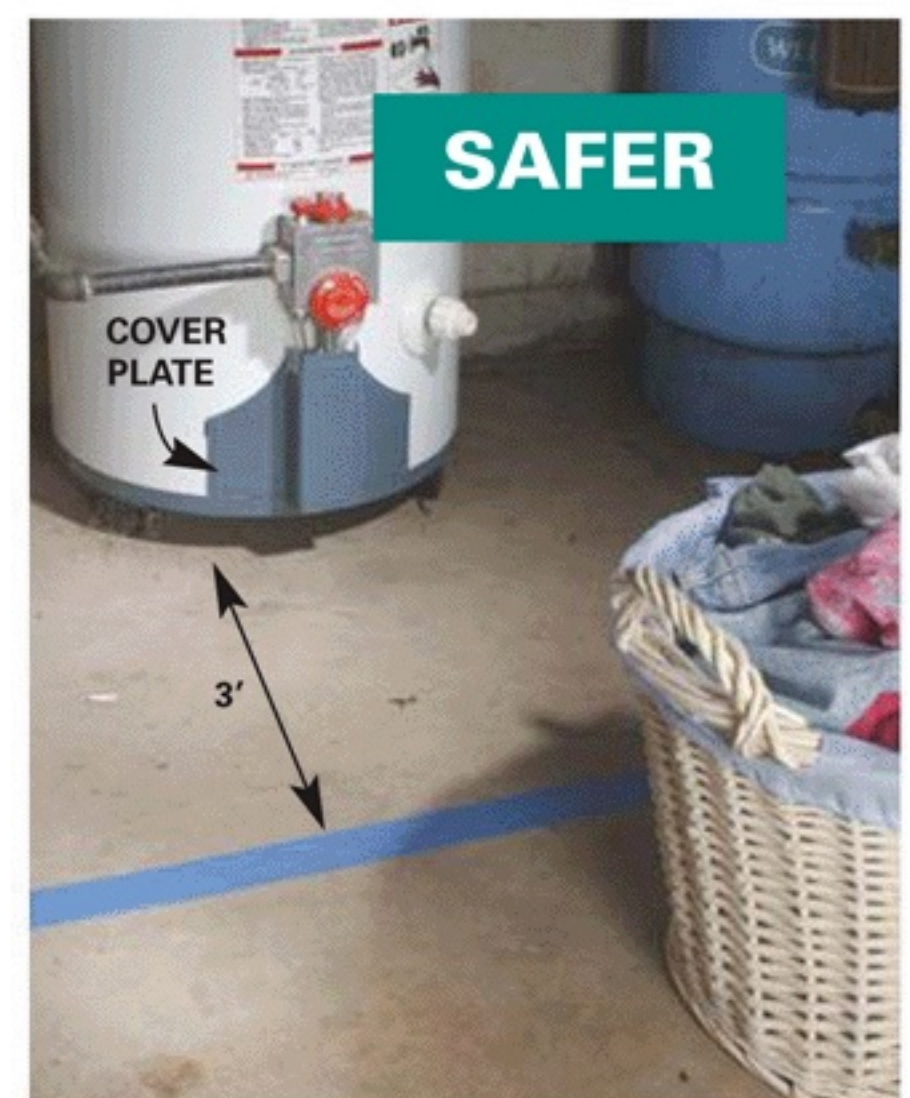
Prevention

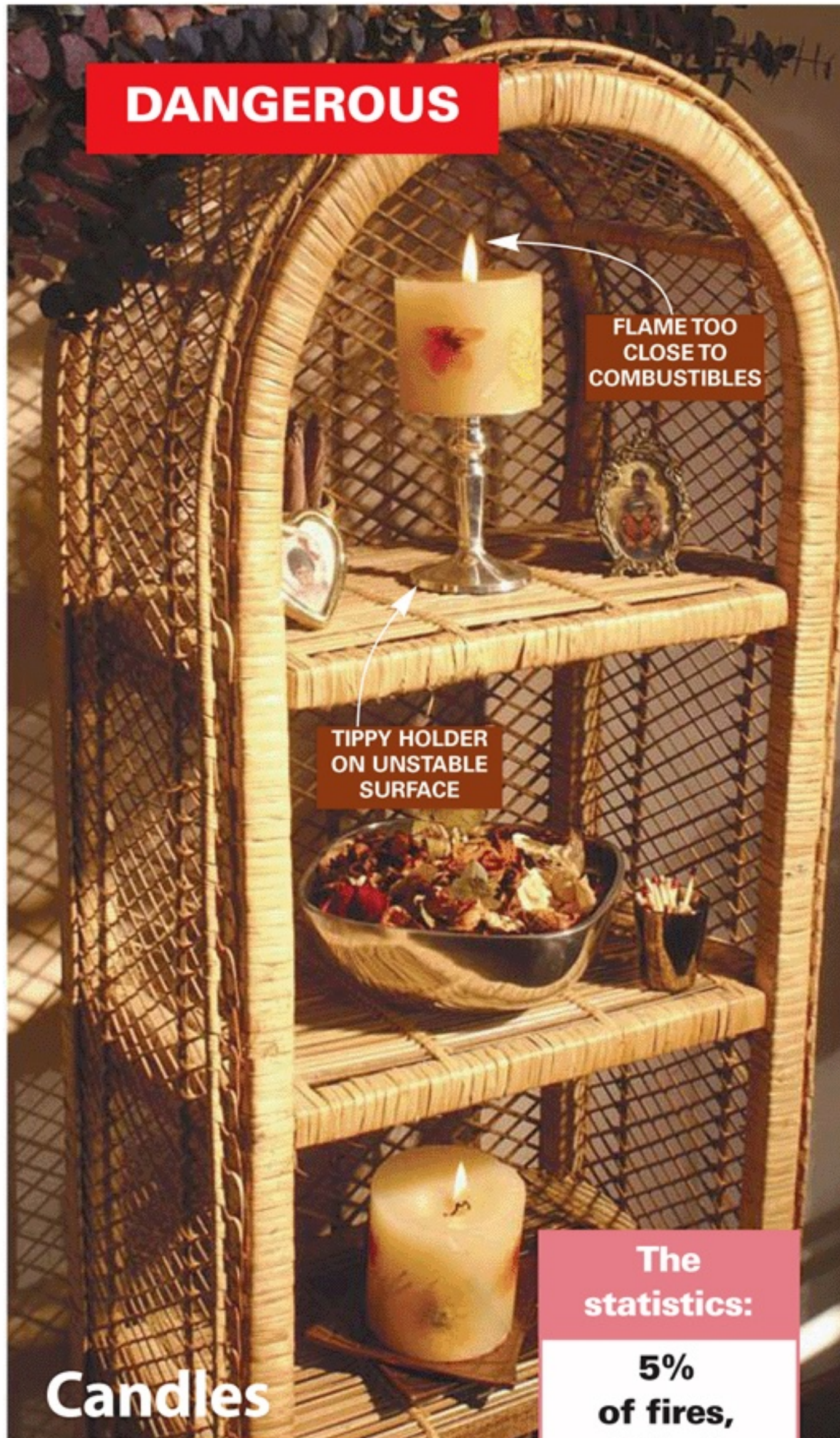
- Make sure protective water heater combustion chamber covers are in place.
- Pull the back service panel from the dryer cabinet and clean all the lint from the interior and around the drum.
- Clean built-up lint from the vent line.
- Replace vinyl vent lines with smooth-walled metal ducts.

The statistics:

**7%
of fires,
4% of
deaths**

Tip: Mark a "combustible-free" zone 3 ft. away from your water heater with masking tape.



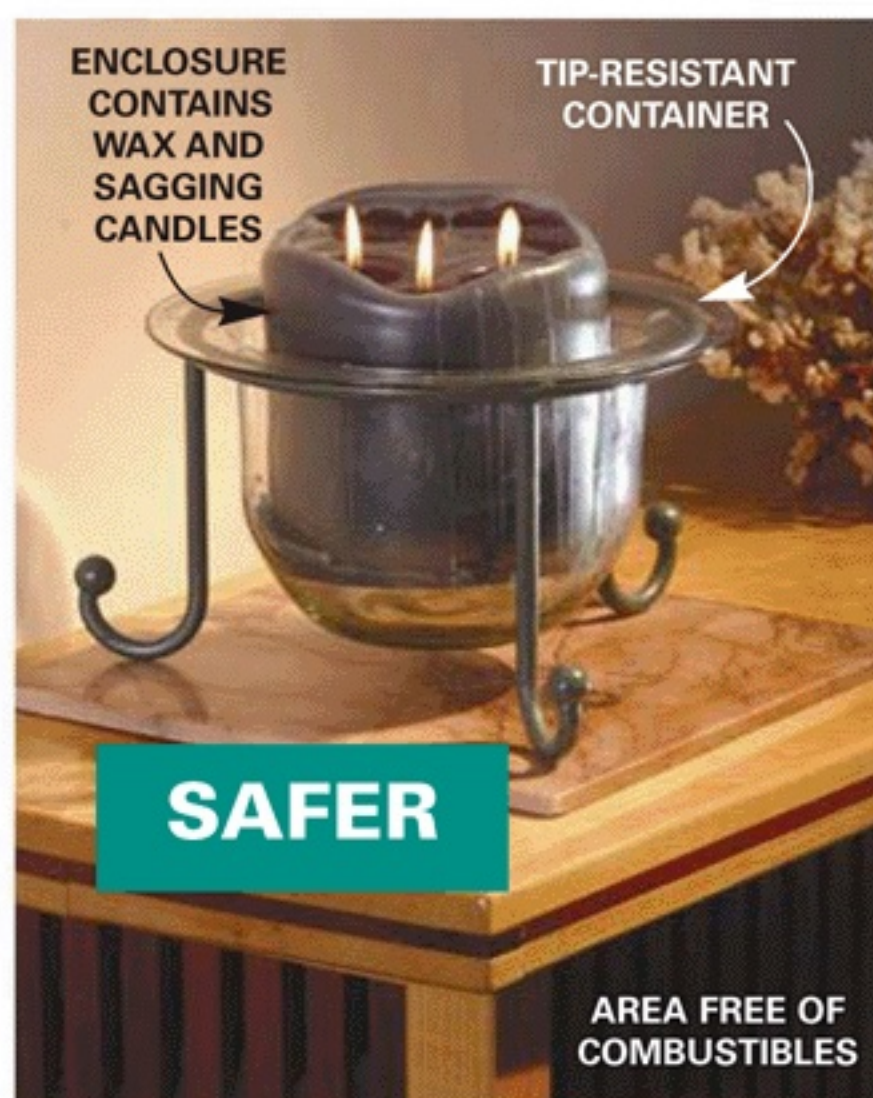
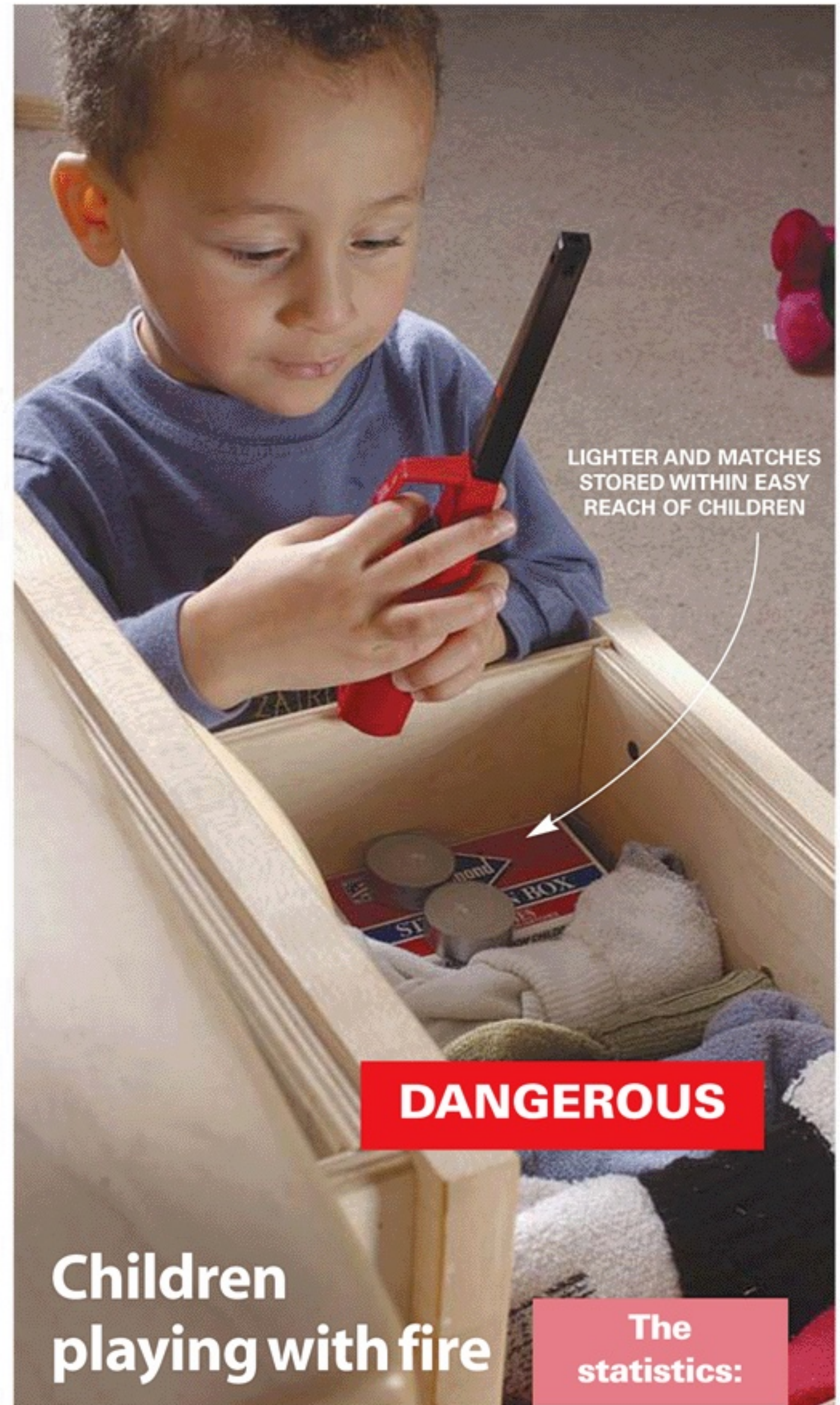
DANGEROUS**Candles****The statistics:**

**5%
of fires,
3% of
deaths**

Prevention

- Use only tip-proof containers.
- Burn candles only while you're awake and in the same room with them.
- Keep candles at least 3 ft. away from combustibles.
- Never burn candles that have combustibles (flowers, leaves and potpourri) cast into the wax.

Tip: Go through your candle and candleholder collection and throw away tippy holders and candles with combustibles cast into them.

**SAFER****DANGEROUS****Children playing with fire****The statistics:**

**5%
of fires,
8% of
deaths**

Prevention

- Store matches and lighters up high, well out of the reach of children.



Tips for a safe and secure home

These days security is no longer a simple pursuit: Leaving on a living room lamp and canceling the mail when heading off for the week won't fool intruders worth their rap sheet.

There is a science to being—and feeling—safe. Just look below. These 23 tips—14 for the outside of the home, nine for the inside—will tighten up security at your home.

Outside

1 No place to hide. Trimming back shrubs and other plantings near the house deprives prowlers of a place to hide. Strategically placed thorny plants—a hedge of rosebushes ringing the perimeter of the house, for example—can also be a deterrent. Consider putting gravel on pathways and under windows to prevent an intruder from approaching silently.

5 Show them the door. Placing lights on both sides of the entrance door should provide ample nighttime illumination, even if one light fails. For added security, consider converting at least one light on the front of your house to an emergency light, which flashes on and off when you flip the light switch twice. When the switch is flipped once, it functions as a regular light. Easy-to-install emergency light kits are available at hardware stores.

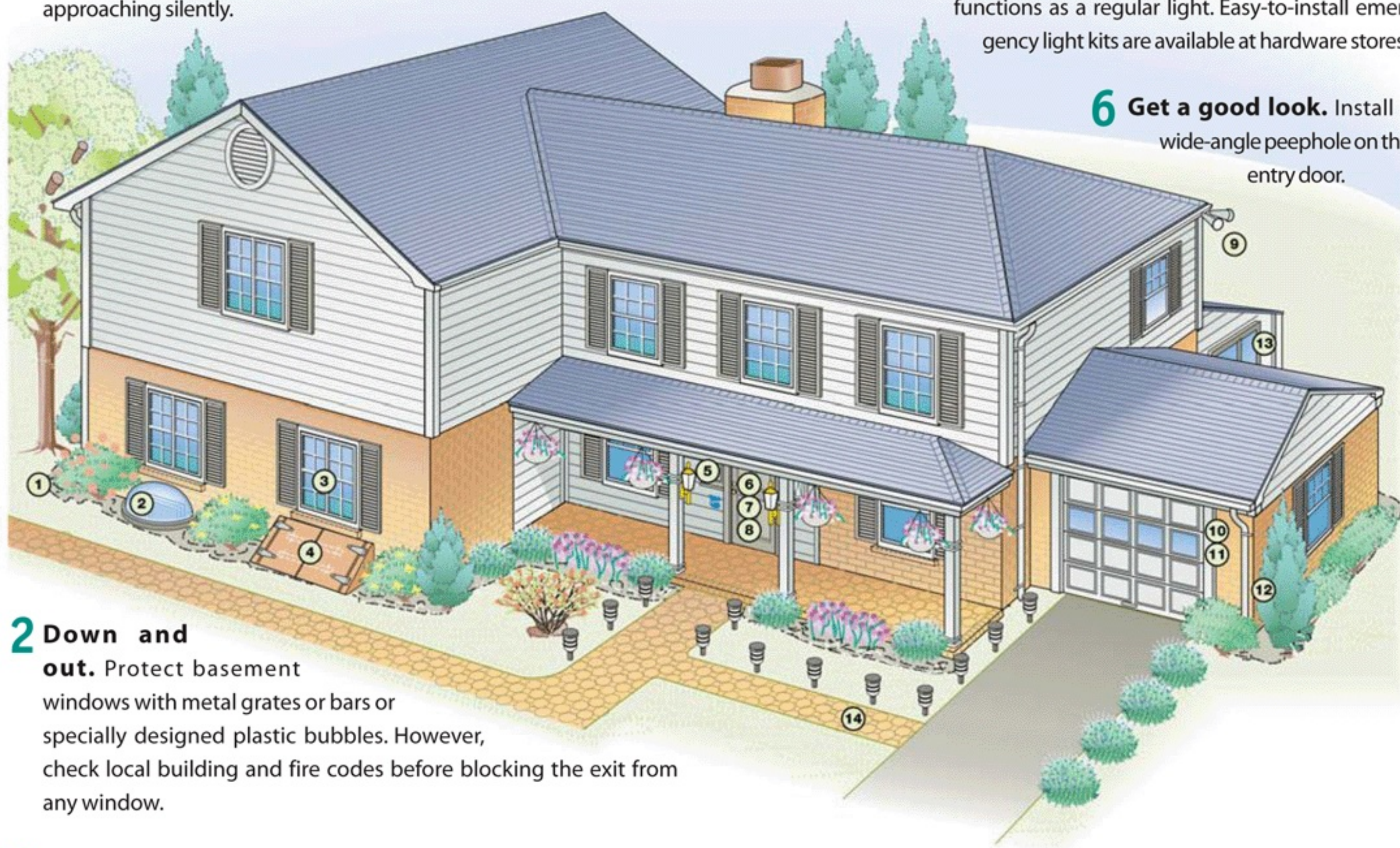
6 Get a good look. Install a wide-angle peephole on the entry door.

2 Down and out. Protect basement windows with metal grates or bars or specially designed plastic bubbles. However, check local building and fire codes before blocking the exit from any window.

3 Window of opportunity? Secure ground-level double-hung windows with keyed pin locks. Also install these locks on any upper-level double-hung windows that are accessible from garage roofs, shed roofs, etc.

4 Bulk up the doors. Secure bulkhead-type basement doors from the underside with sliding crossbars. Recess the hinge barrels in concrete to protect them.

7 Install deadbolt locks on all exterior doors, and on doors leading to the basement and the garage. If double-cylinder deadbolts are used, always keep a key within easy reach of the door to prevent being trapped in a fire.



8 The strong, solid type. Make sure all exterior doors are solid-core to provide strength against intruders.

9 Moving targets. Motion-detecting lights go on when someone approaches the house and enters the sensory field. Install them on your house's exterior so they illuminate areas that can't be seen from the street—back and side yards, for example, as well as areas that are screened by shrubs, trees, or other vegetation. Place the lights high enough so they can't be reached without a ladder.

10 Open-and-shut case. If you have an automatic garage door opener, consider replacing it with one that has a "rolling code." This defeats the "code grabbing" devices that thieves sometimes possess, and that allow them to access the electronic code that opens your door. To improve security and safety, you can also purchase remote-control devices that will open the garage doors and turn on interior and exterior lights—all without your having to get out of the car.

11 Don't forget the garage. Reinforce the panels on wooden garage doors. If there are windows in the doors, consider replacing them with shatterproof glass. When going away for long periods, padlock the garage door track, or if it is an electric door, turn off the power. Electric garage doors should be the newer variety that reverse if they touch anything while closing.

12 Grounding an intruder. Use vinyl rather than metal drainpipes, since vinyl is less likely to support a climber. Also, cut back tree limbs that a burglar could use to climb onto the roof. Place trellises and picnic tables away from the house.

13 Sliding home. Secure sliding glass doors with keyed pin locks that are screwed into the inside frame. The fixed panel of the door should also be screwed into the frame so it can't be lifted out.

14 A well-lit path. Installing low-voltage ground lighting makes outdoor walkways safer at night. Place timers or light sensors on the lights so they go on automatically at dusk.

Inside

15 If you smell gas, evacuate the house immediately. Call the fire department from a neighbor's house with your cell phone—using the landline phone or any appliance can be dangerous when gas is in the air.

16 Be savvy about smoke. Install at least one smoke detector on each level of the home, including the basement and attic, and in the garage. If bedrooms are more than 40 ft. apart, place a smoke detector outside each bedroom. Smoke detectors are also needed at the top of stairwells and at the bottom of the basement stairs. Smoke detectors can be part of a whole-house security system that includes protection against break-ins.

17 And about security. An electronic security system is a good idea. The most secure are the monitored systems, but unmonitored systems also help protect against burglary. Put a sign in front of the house indicating the presence of an alarm system or a watchdog.

18 Quick call. Program the police and fire department numbers into your phone's autodial, and post the numbers on the wall.

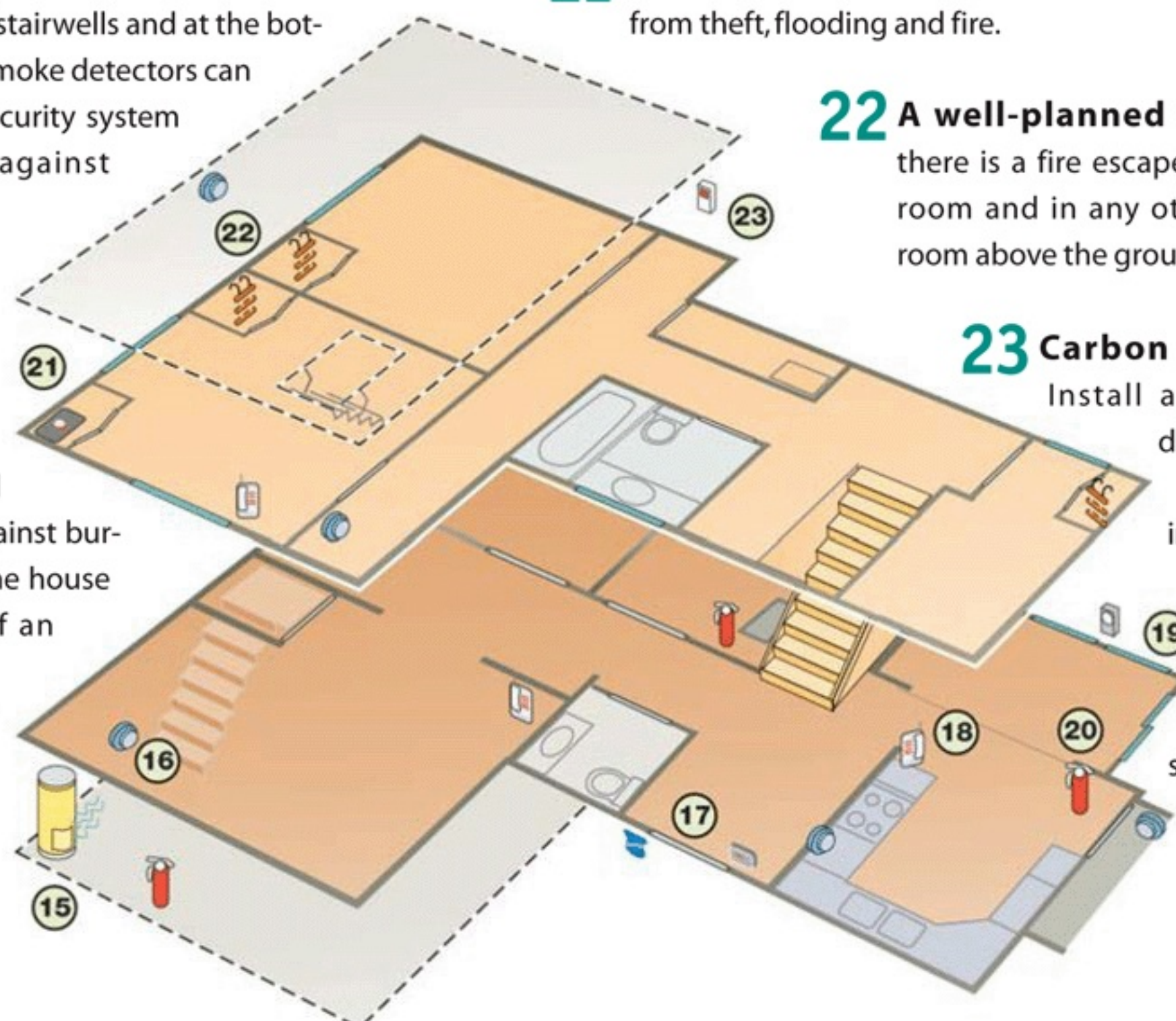
19 Put timers on lights and possibly on appliances such as the air conditioner, television, and radio so you can program them to go on and off while you are away.

20 Store fire extinguishers in various locations in the house, most importantly the kitchen, basement, and any room where there is a fireplace.

21 Store valuables in a fireproof, waterproof safe to protect them from theft, flooding and fire.

22 A well-planned escape. Make sure there is a fire escape ladder in each bedroom and in any other frequently used room above the ground floor.

23 Carbon monoxide alert. Install a carbon monoxide detector on each level of the house, including the basement and attic, and in the garage. However, do not place a detector near a source of combustion, such as a furnace or gas stove.



Maintain your furnace and air conditioner

Keep your central air conditioner humming

The outside unit of a central AC is called the condenser. It contains a compressor, cooling fins and tubes and a fan. The fan sucks air through the fins and cools a special coolant, which the compressor then pumps into the house to the evaporator through a copper tube. For trouble-free cooling, follow these 10 steps.



- 1** Turn off the electrical power to the condenser unit at the outdoor shutoff. Either pull out a block or move a switch to the off position. If uncertain, turn off the power to the AC at the main electrical panel.



- 2** Vacuum grass clippings, leaves and other debris from the exterior fins with a soft brush attachment. Clear away all bushes, weeds and grass within 2 ft. of the condenser.



- 3** Realign bent or crushed fins with gentle pressure from a dinner knife. Don't insert the knife more than 1/2 in.



4 Unscrew the top grille. Lift out the fan and carefully set it aside without stressing the electrical wires. Pull out any leaves and wipe the interior surfaces clean with a damp cloth.



5 Spray the fins using moderate water pressure from a hose nozzle. Direct the spray from the inside out. Reinstall the fan.



6 Turn the power back on, then set the house thermostat to "cool" so the compressor comes on. After 10 minutes, feel the insulated tube. It should feel cool. The uninsulated tube should feel warm.



7 Turn off the power to the furnace at a nearby switch or at the main panel. Then pull out the furnace filter and check it for dirt buildup. Change it if necessary. This helps keep the airstream from the blower clean.

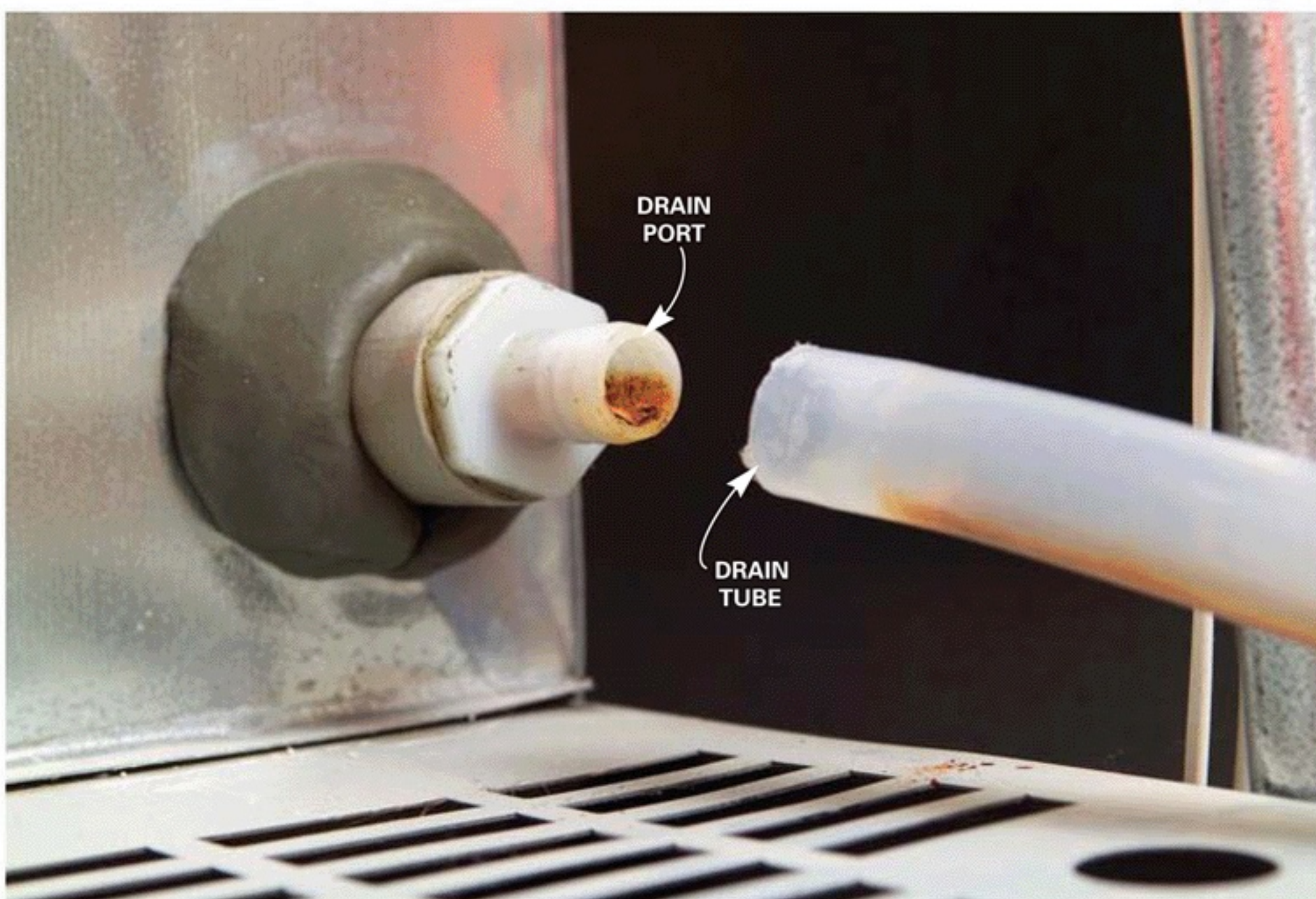
MAINTAIN YOUR FURNACE AND AIR CONDITIONER



8 Open the blower compartment and vacuum up the dust. Check the motor for lubrication ports. If it has them, squeeze five drops of electric motor oil into each.



9 Pull off the plastic condensation drain tube and check it for algae growth. Clean it by pouring a bleach/ water solution (1:16 ratio) through the tube to flush the line. Or simply replace the tube.



10 Poke a pipe cleaner into the drain port and clean out any debris. Reinstall the drain tube and turn the power back on. This tune-up, done every spring, will help keep your central air conditioner running even on the hottest days.

Noisy air conditioner fix

Fencing one or all sides of an air conditioner's outside unit (the condenser) can deflect noise. But experiment first: Prop up plywood around the unit so you can judge how much good a fence will do. If you decide to build a fence, keep it at least 3 ft. from the unit to allow airflow. For the best sound reduction, overlap fence boards instead of leaving gaps between them.

Aside from a fence, there are a few other approaches you should consider:

- If your condenser is older, the best solution is a new unit. Newer designs are dramatically quieter than those produced just a few years ago. And they save money. A high-efficiency unit might cut your cooling bills in half and pay for itself in three or four years. The downside, of course, is the initial cost. Expect to pay at least \$1,500 (installed).

- If you already have a newer condenser, the worst noise is probably coming from the compressor. (Fans on newer units are very quiet.) Contact the manufacturer to find a sound blanket for your model or buy a universal blanket (\$60 at brinmar.com and other online retailers; search for "compressor sound blanket"). Installation is easy. Don't bother putting a blanket on an old unit—you'll still hear the noisy fan.

CAUTION

Shut off all power to the unit. Turn off the thermostat inside the house, switch off the breakers at the main panel and pull out the fuse block at the outside disconnect box.



1 Unscrew and lift off the top panel. The heavy fan motor is mounted on the panel, so have a helper hold it while you install the blanket.

2 Wrap the sound blanket around the compressor. Position the blanket so it doesn't touch the surrounding coils and won't obstruct the fan blades.

Protect an air conditioner from the elements

Wrapping an A/C condenser before winter is not a good idea. Steel rusts, and wet steel rusts even more. Even when wrapped tightly, a condenser isn't airtight, so moisture gets trapped under the tarp and condenses on the inside of the unit. It's better if the moisture is free to evaporate.

Covering an A/C condenser also encourages rodents to move the family into new digs where they're protected from the elements. Once they're settled in, they'll gnaw on the compressor wiring and insulation. Come spring, you'll have a stinky cleanup, a rusty A/C condenser and a hefty bill for rewiring.

If you want to protect the unit from falling icicles, just place a piece of plywood over the fan guard and weight it down with bricks. If you want to protect the metal and keep it looking good, give your condenser a coat of car wax before the snow flies.



Caulk and cover room air conditioners

A room air conditioner keeps a section of the house cool. The problem is, it'll keep the room cool all winter long if it isn't covered properly. If you have a window unit, the best solution is to remove it so the cold air won't flow through and around it. If you decide to leave it in or you have a permanently installed wall unit, grab some removable caulk and an inexpensive window air conditioner cover to keep out the cold.

Place the cover over the outside of the air conditioner, fitting the sewn-in corner straps over the bottom corners. Wrap the middle straps under and up the sides of the unit, then hook them over the top. Inside the house, apply removable caulk around the air conditioner where it meets the wall or window. If the air conditioner is a built-in unit, permanently seal it with latex caulk.

Window air conditioner maintenance and storage

To keep a window air conditioner running efficiently and extend its life, here's what you should do. Remove the unit in the fall, and take a half-hour or so to clean the filter, wipe out the unit and flush dirt from the condenser coil. If you keep the coils clean, that's 90 percent of keeping an air conditioner in shape to last long and run efficiently. In fact, if you have an air conditioner that just won't blow cold air, clean the coils before you call a pro to add coolant. Dirty coils are usually the culprit.

First, remove the filter and clean it with soap and water according to your owner's guide. Then vacuum the fins of the evaporator coil (which is directly behind the filter) to remove dust and dirt.

Now move to the rear of the air conditioner to clean the condenser coil, which is usually the dirtier of the two. Cover the electric motor with a plastic bag to keep it and the wiring dry.



Then take a hose-end nozzle and spray water from the outside inward (see photo). Wipe off the entire unit until it's dry, then let it air dry for a couple of days before storing it. If you have an air compressor, it's a good idea to blow air through the fins to speed drying and reduce the risk of rust setting in during storage.

8 quick furnace fixes you can do yourself

A furnace can be intimidating—especially when it's not working. However, there is good news from furnace repair pros. Roughly a quarter of all service calls could be avoided with easy fixes that cost little or nothing. When you're troubleshooting your furnace, look for simple solutions first.

SAFETY NOTE

Always turn off the furnace shutoff switch and turn the thermostat off or all the way down before changing the filter or working on the thermostat or furnace.



1 Check the thermostat to make sure it's on

Before you assume you have a furnace problem, check the thermostat to make sure it's actually telling the furnace to come on. Thermostats, especially programmable ones, can be complicated, and the more options a thermostat has, the more that can go wrong.



- Make sure the switch is on "Heat" rather than on "Cool."
- Check the temperature setting.
- Compare the temperature setting to the room temperature. Set the temperature five degrees higher than the room temperature and see if the furnace kicks on.
- Make sure the program is displaying the right day and time, as well as a.m. and p.m. settings.
- Trace the thermostat wires back to the furnace to check for breaks, especially if you've done any remodeling recently. If you find a break in one of the thin wires, splice the line back together and wrap it with electrical tape.
- Replace the battery. If you have a power outage with a dead battery, you'll lose your settings and the thermostat will revert to the default program.
- Open the thermostat and gently blow out any dust or debris. Make sure it's level and firmly attached on the wall, and that none of the wires coming into it are loose.
- If you can't make the program settings work, you can bypass them altogether. Simply punch in the temperature you want with the up/down control and then press the hold button. That will switch on the furnace if the thermostat programming is the problem.

2 Check shutoff switches and breakers

It sounds unbelievable, but furnace technicians often find that the only "repair" a furnace needs is to be turned on. Look for a standard wall switch on or near the furnace—all furnaces, no matter what age or type, have one somewhere. Check the circuit breaker or fuse for the furnace as well. Make sure the front panel covering the blower motor is securely fastened—there's a push-in switch under it that must be fully depressed for the furnace to operate.

3 Make sure the gas is on

Just as with switches, someone may have turned off a gas valve and then forgotten to turn it back on. Trace the gas line back from the furnace to the meter, and if you see a handle that's perpendicular to the gas pipe, turn it so it's parallel.

If you have an old furnace or boiler, you may have a pilot light. Remove the front panel and the burner cover and check to make sure it's lit.



Lost your owner's manual? Most major-brand manuals are on the Web—just go to the manufacturer's Web site.

4 Look for blocked or leaky ducts that can restrict airflow

If your furnace comes on but one or two rooms are cold, first make sure all the room registers are open. Then examine any ductwork you can get access to and look for gaps between sections or branching points. Seal any gaps between sections of duct with special metal duct tape. Don't use standard cloth duct tape—it quickly deteriorates, and it may also cause ducts to leak if it was used to seal sections in the past.

Also check for handles protruding from the ductwork. These are dampers or air conditioner bypasses—make sure they're open.

5 Clean away leaves and debris from heat pumps or intake and exhaust valves

If you have a furnace that vents out the side of the house, make sure nothing is blocking the intake or exhaust. If either of the pipes is covered with screen mesh (like window screen), replace it with 1/2-in.-mesh hardware cloth. If ice is clogging one of the pipes, you have a bigger problem somewhere in the system. Clear it off and call a technician to find out why it's happening.

If you have a heat pump, clear away grass and leaves from the fins of the outdoor compressor unit. Before heating season starts, hose it down gently from the top to rinse dirt and debris out of the housing.

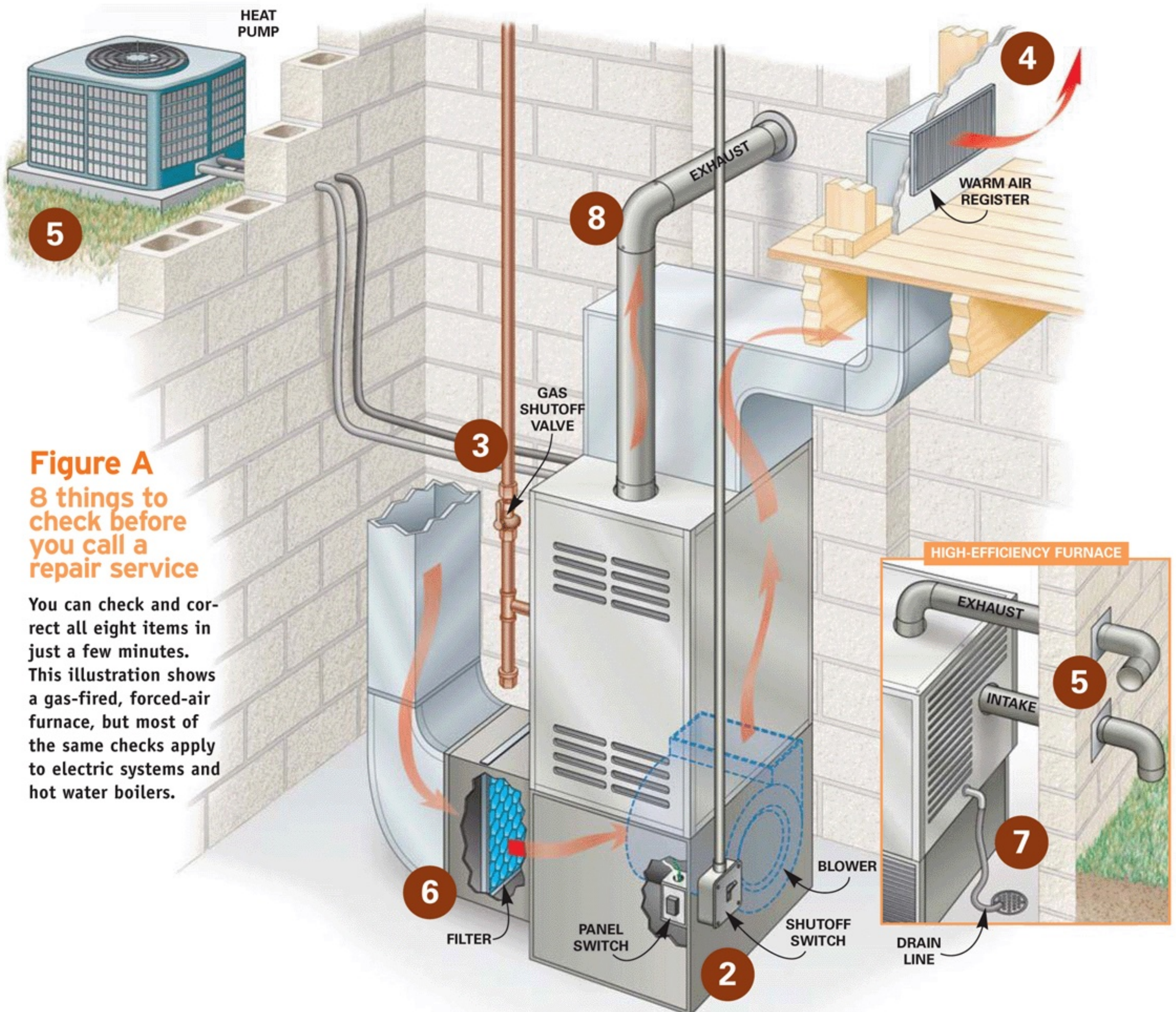


Figure A
8 things to check before you call a repair service

You can check and correct all eight items in just a few minutes. This illustration shows a gas-fired, forced-air furnace, but most of the same checks apply to electric systems and hot water boilers.

6 Change filters

Dirty filters are the most common cause of furnace problems. Dust and dirt restrict airflow—and if the filter gets too clogged, the heat exchanger will overheat and shut off too quickly, and your house won't warm up. If the blower is running but no heat is coming out, replace the filter. A dirty filter also causes soot buildup on the heat exchanger, reducing the efficiency of the furnace and shortening its life.

The owner's manual shows where the filter is and how to remove it. Change inexpensive flat filters at least once a month. Make sure that the arrow points toward the furnace. Inspect pleated filters once a month. Hold them up to the light and if you can't see the light clearly through them, replace them. Manufacturers say pleated filters are good for three months, but change them more frequently if you have pets, kids or generate lots of dust.



HVAC reminders for the forgetful

It's hard to keep track of the furnace maintenance schedule. To make it easier, stick a small white magnetic board to your furnace duct. Write down the furnace filter size, the brand, the date you last changed the filter, and the date the furnace was last cleaned and checked. When it's time to put in a new filter or have the furnace cleaned, erase the old date and write down the new one.

7 Flush out drain lines

High-efficiency furnaces can drain off several gallons of water a day in heating season. If the drain lines become restricted by sediment or mold growth, the furnace will shut down. If the drain hose looks dirty, remove the hose, fill it with a mixture of bleach and water (25 percent bleach), then flush it after several minutes.

8 Make sure the chimney exhaust flue is clear

Drawn by the warmth, birds sometimes fall into the chimney exhaust flue. Turn the furnace off and the thermostat all the way down, then dismantle the duct where it exits the furnace and check for debris. Be sure to reassemble the sections in the same order and direction that you took them out.

Furnace filter reminder

Whenever you buy a new box of furnace filters, write the months of the year on the individual filters (and change them monthly). That way, you'll always know when you last changed the filter.



Everyday problem solvers

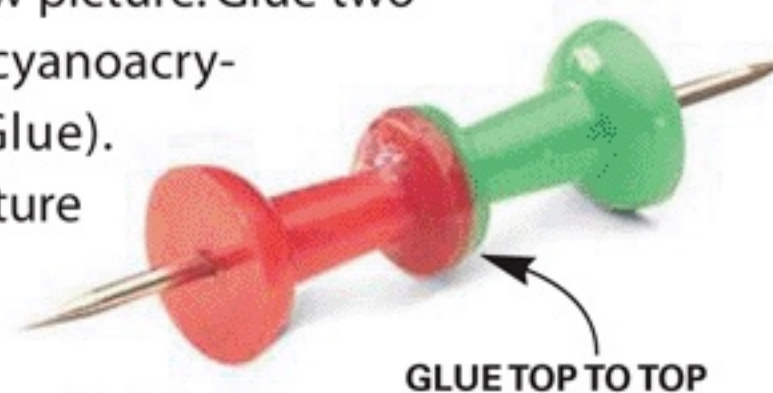
Photo positioning tips

To hang a picture frame right where you want it, make a guide for your nail. Tape over the head of a thumbtack or stick the head on double-faced tape right under the picture's mounting bracket. Hold the picture in place and push on the frame until the tack's point pricks the wall. Now you have a tiny mark to show you where to place your hanging nail.



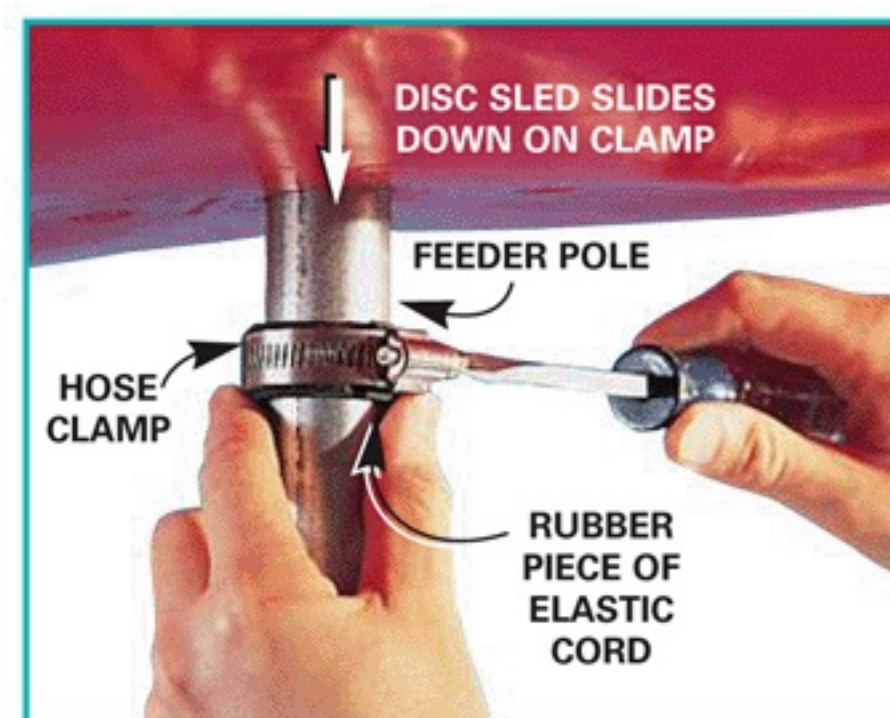
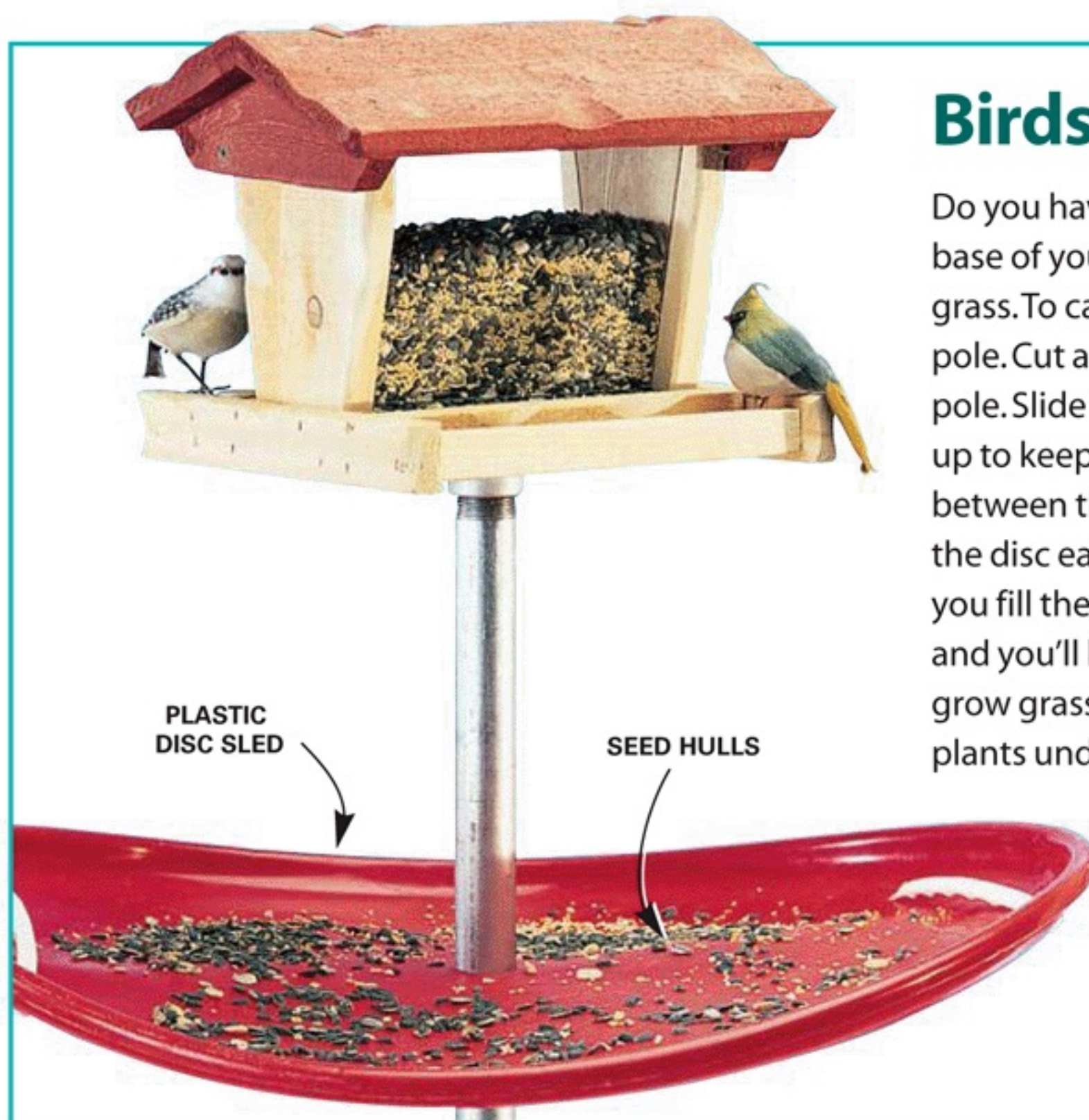
Here's another nifty way to mark nail hole positions on walls when you're hanging that new picture. Glue two pushpins top to top with a cyanoacrylate glue (such as Super Glue).

Find the center of the picture along the upper back edge of the frame and press in one of the pins. Now just hold the picture up, maneuver it to the best spot, and press in to mark for the nail. This tip works best when you're hanging pictures with hardware screwed on the back of the frame, but if you're putting up wire-hung pictures, just measure the distance from the top of the wire to the pushpin hole and move the nail down that distance.



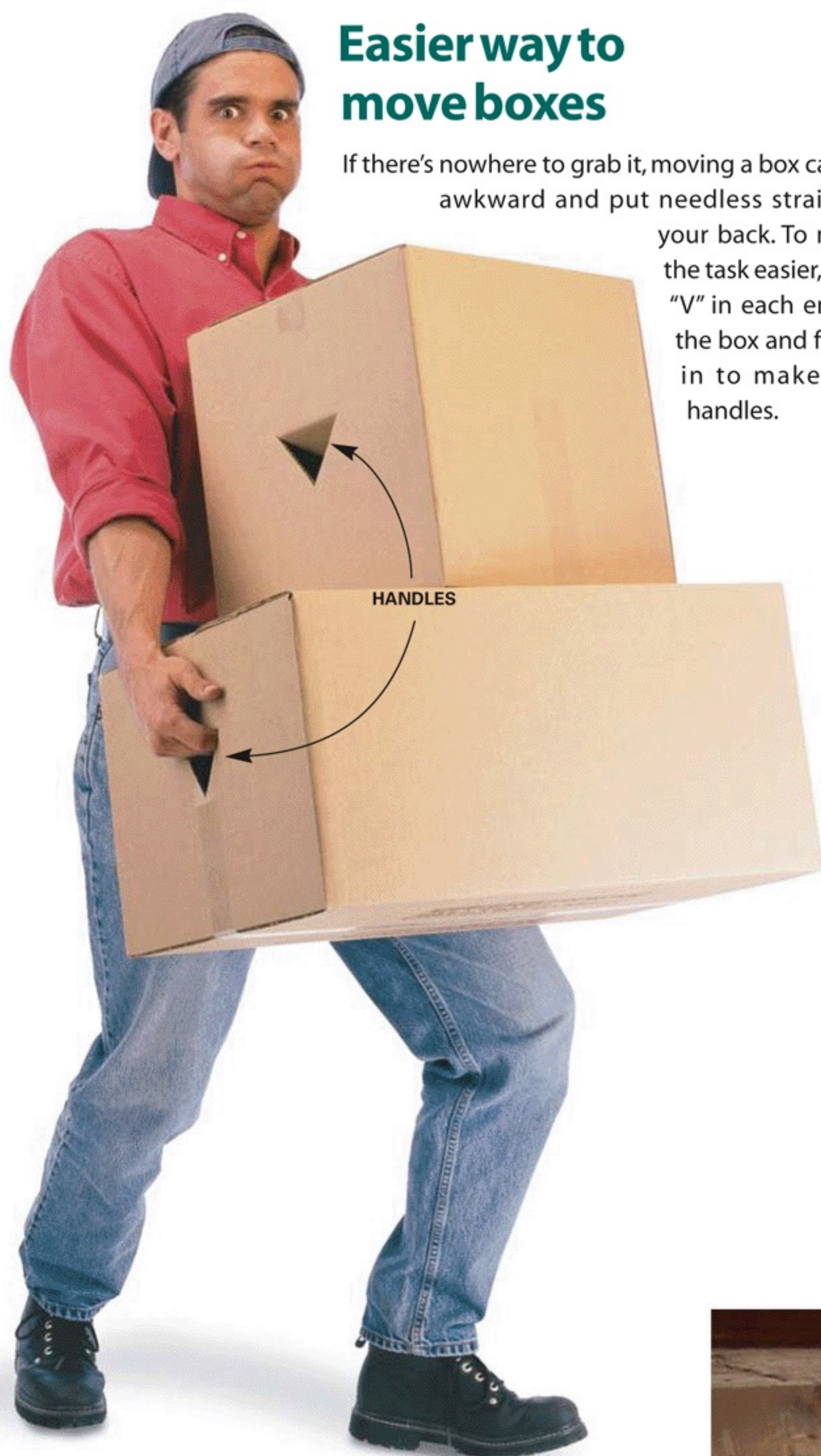
Birdseed catcher

Do you have a mound of seeds and hulls on the ground at the base of your birdfeeder? It's not only ugly but also can kill the grass. To catch this debris, mount a plastic disc sled to the feeder pole. Cut a hole in the middle of the disc the same size as the pole. Slide the disc over the pole and place a hose clamp midway up to keep it in place. A short piece of an old rubber cord placed between the pole and the clamp will help hold the disc. Empty the disc each time you fill the feeder and you'll be able to grow grass or other plants under your feeder again.



Easier way to move boxes

If there's nowhere to grab it, moving a box can be awkward and put needless strain on your back. To make the task easier, cut a "V" in each end of the box and fold it in to make box handles.



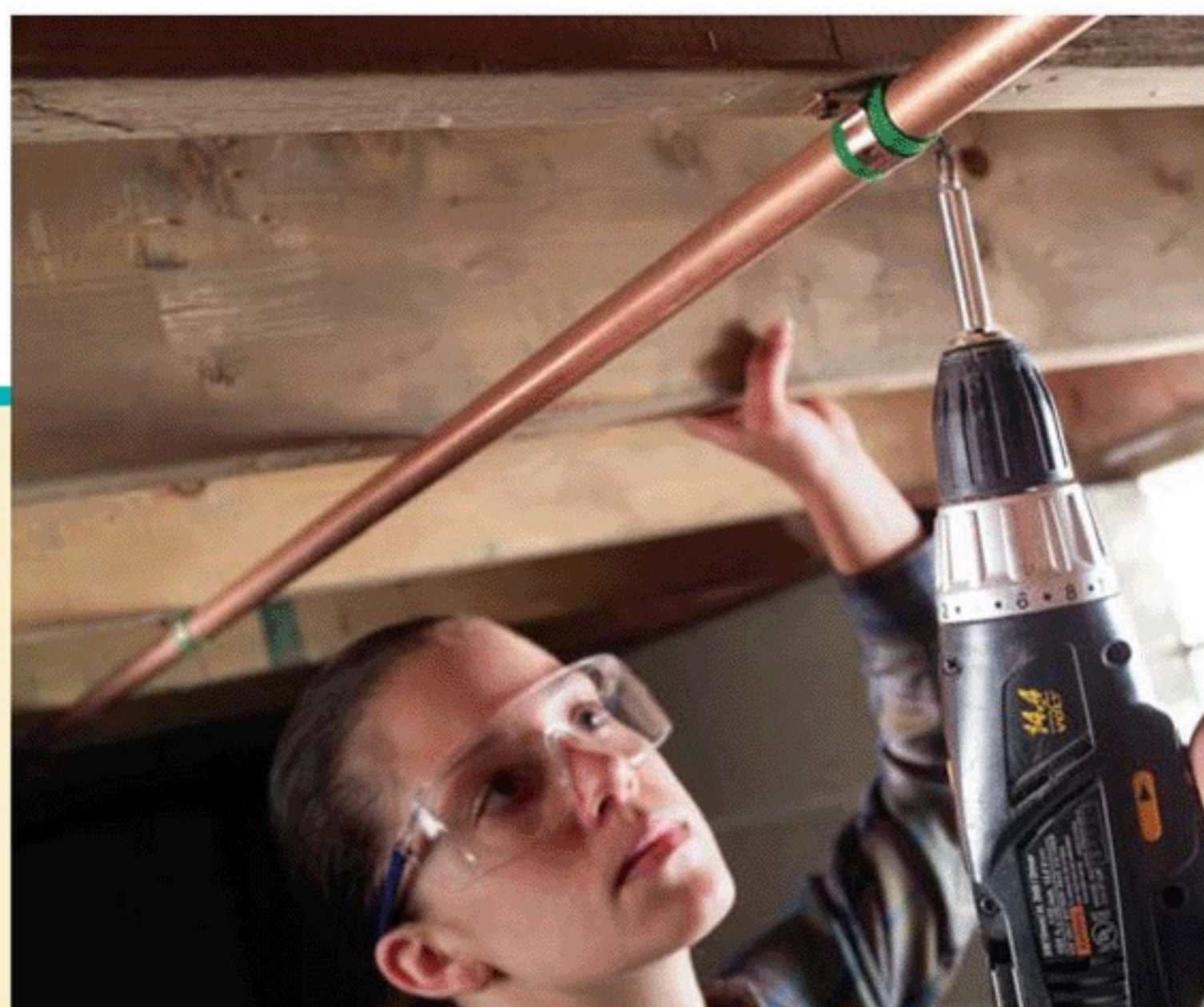
Stop sink-sprayer hang-ups

If you have to jiggle the hose as you pull out your kitchen sink sprayer, chances are the hose is catching on the shutoff valves. For smooth operation, slip 1/2-in. foam pipe insulation over the pipes and shutoff handles. Tape it if it won't stay put. Get the insulation at home centers for about \$3.



Silence creaking pipes

Running hot water can cause copper pipes to expand and grind against pipe hangers and joists. So pick up some adhesive-backed felt at the hardware store and cut it into strips. Then remove each hanger and wrap the pipe before refastening the hanger.



EVERYDAY PROBLEM SOLVERS



Dishwasher double duty

It can take forever to wash greasy dust off hard-to-clean items like switch plates, light fixture covers and stove drip pans. Why not do it the easy way and just throw them into the dishwasher? It really works great on items made out of plastic, aluminum or steel—especially items like vent covers that have lots of gaps and detailing. Toss them into the top rack and send them through a normal cycle. Don't do this with things that are enameled, painted, plated or made of brass or wood.

Money measurement

A dollar bill is 6.14 in. long. But you don't need to memorize that; just remember that a buck is about 6 in. long and you'll always have an approximate measuring tool in your wallet.



Bumper sticker release

Heat from a hair dryer softens adhesive, making bumper stickers, price tags and other labels easy to pull off. Start at one corner and pull slowly, allowing the heat to loosen the sticker.



Three ways to get the smell out of a fridge

1. **Crumpled newspaper.** The ink absorbs the odor.
2. **Charcoal briquettes** absorb the odor just like a filter in a range hood.
3. **Baking soda** is the old standby. Leave an open box in the fridge and replace it every three months for continuous deodorizing.



Quiet loud sinks

Fill the space between two stainless steel sink basins with expanding foam. The foam deadens vibrations and lessens the gong effect. It's possible to do this with the sink in place but much neater and easier before installation. Either way, let the foam harden and then trim away the excess with a knife.



Fill those cavities

An unfinished wall or ceiling isn't an eyesore; it's a storage opportunity. With 15 bucks' worth of shelf hardware and 1x4s, you can pack 8 ft. or more of storage into one wall stud cavity. For about \$2 per ft., you can turn ceiling joist space into storage space with wire shelving. If you store balls up there, keep in mind that without a lip on the shelf, they may fall off!



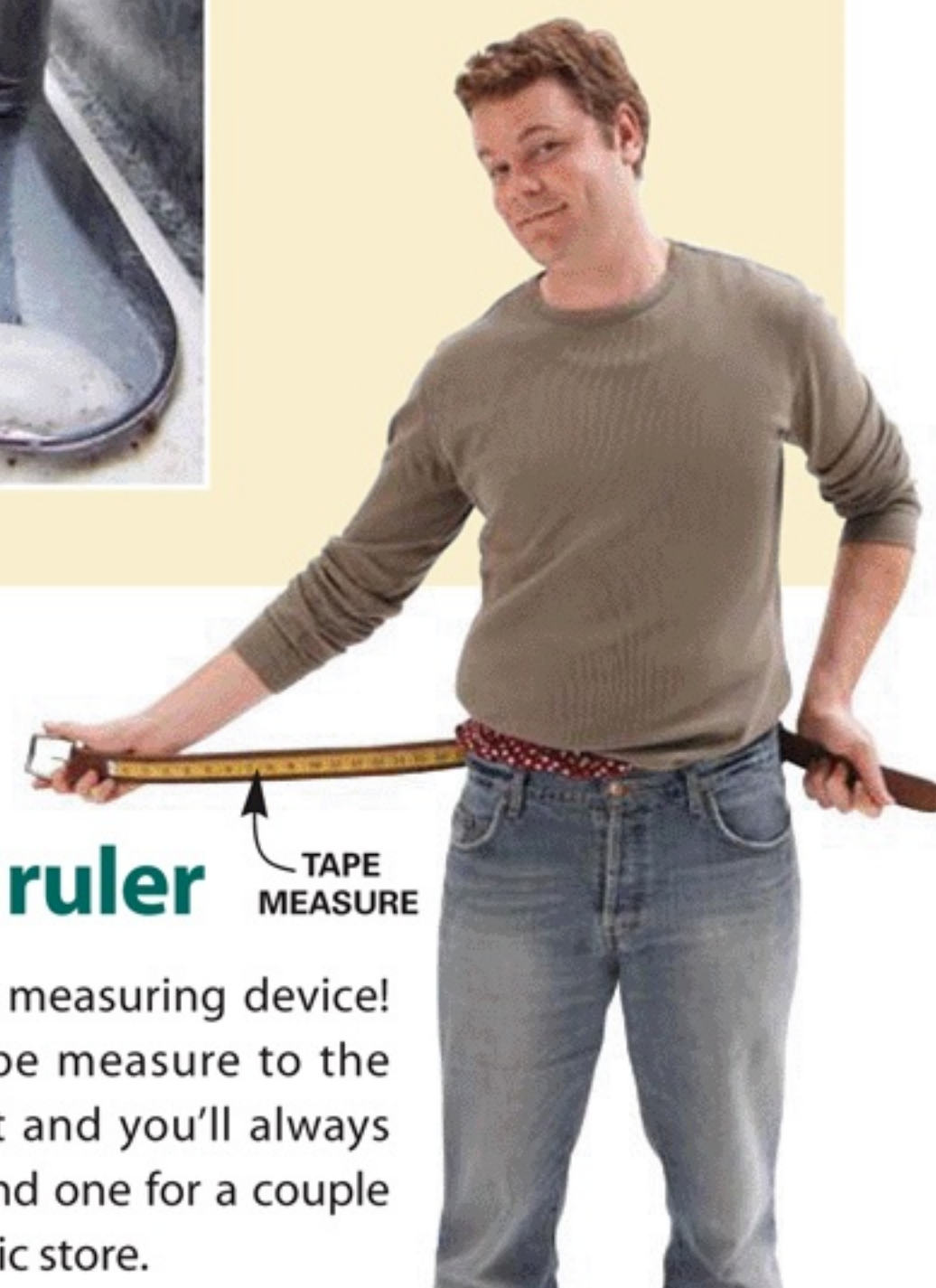
Corner cleaner

If you find it frustrating to clean all the tight corners in your cabinet doors and windows, go to the store and buy a cheap electric tooth-brush. You can use it to clean all those hard-to-reach places.



Waistline ruler

Become your own measuring device! Glue a flexible tape measure to the inside of your belt and you'll always have it on hand. Find one for a couple of bucks at any fabric store.





Scuff mark eraser

Clean off shoe scuff marks from vinyl flooring with a clean, dry tennis ball. A light rub and heel marks are "erased."

Stop losing socks

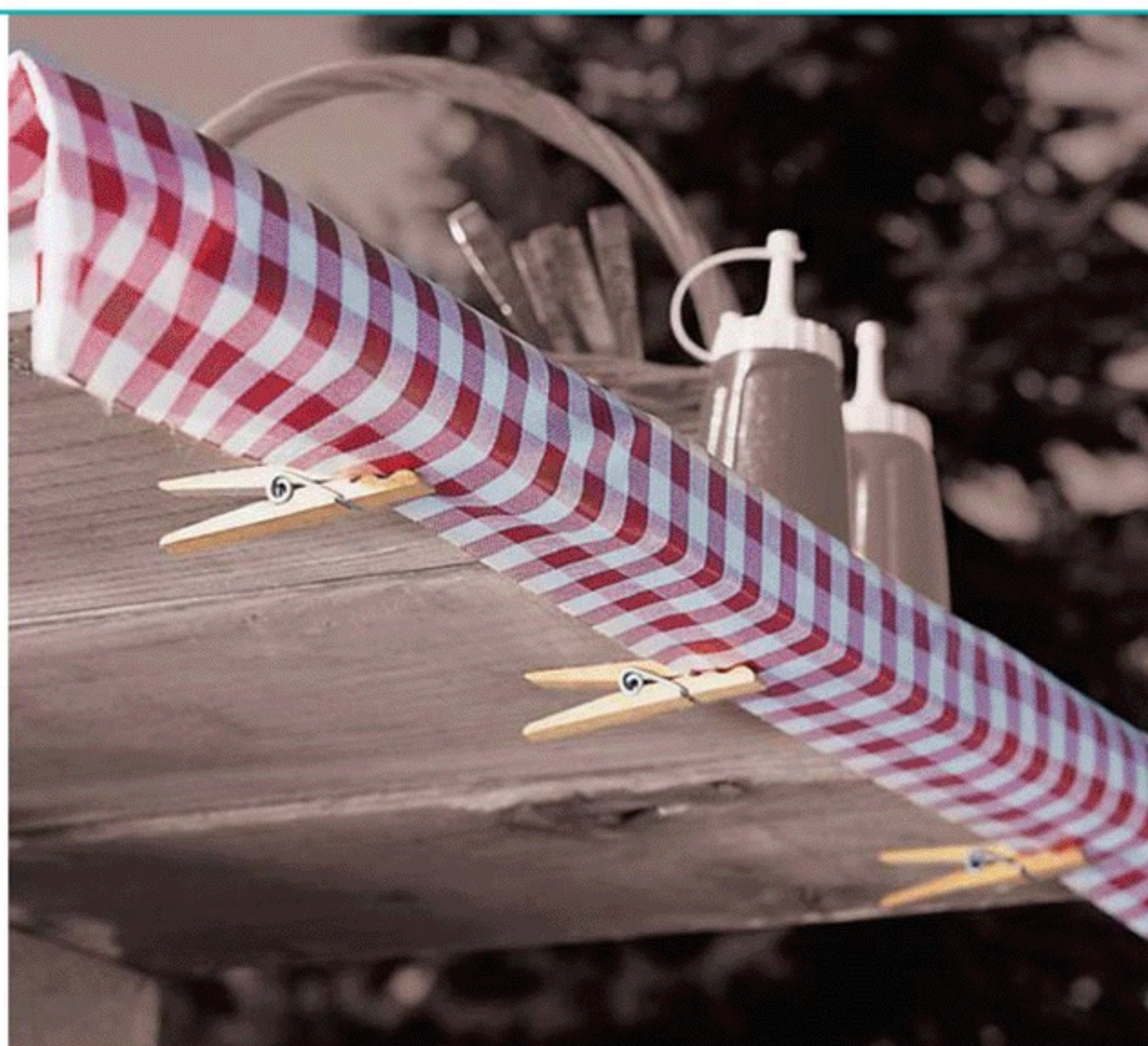
Stuff a strip of foam pipe insulation into the space between your washer and your dryer or along the wall. That way, socks can't slip into the abyss.



Picnic tablecloth control

Imagine it's a beautiful sunny afternoon in July and your friends are over for a nice, relaxing picnic. The table is set and the brats are hot off the grill, but before you can say "please pass the ketchup," a gust of wind catches the tablecloth, turns it into a sail and sends the place settings to the dogs.

Here's a cool idea to avoid this hassle. Glue spring-type clothespins to the underside of the picnic table to clasp the tablecloth. Space the pins every 18 in. or so and apply epoxy resin (it's waterproof) to each. Hold them in place with tape until the epoxy dries. Then simply clip the tablecloth tightly to the table.





Lint bunnies begone

If you notice that it takes longer than normal for loads to dry in your clothes dryer, it may be time to clean out the vent. First detach the duct from behind the unit and then push a plumbing snake through your dryer vent from outside. Tie a rag securely to the snake end. Pull the cloth and snake through a couple of times and your clean vent will not only save energy but possibly prevent a fire as well.



Microwave cleaner

It's easy to clean baked-on food and spills from your microwave! Partially fill a measuring or coffee cup with water and add a slice of lemon. Boil the water for a minute, and then leave the door closed and let the steam loosen the mess. After 10 minutes, open the door and wipe away the grime.



Up-high duster

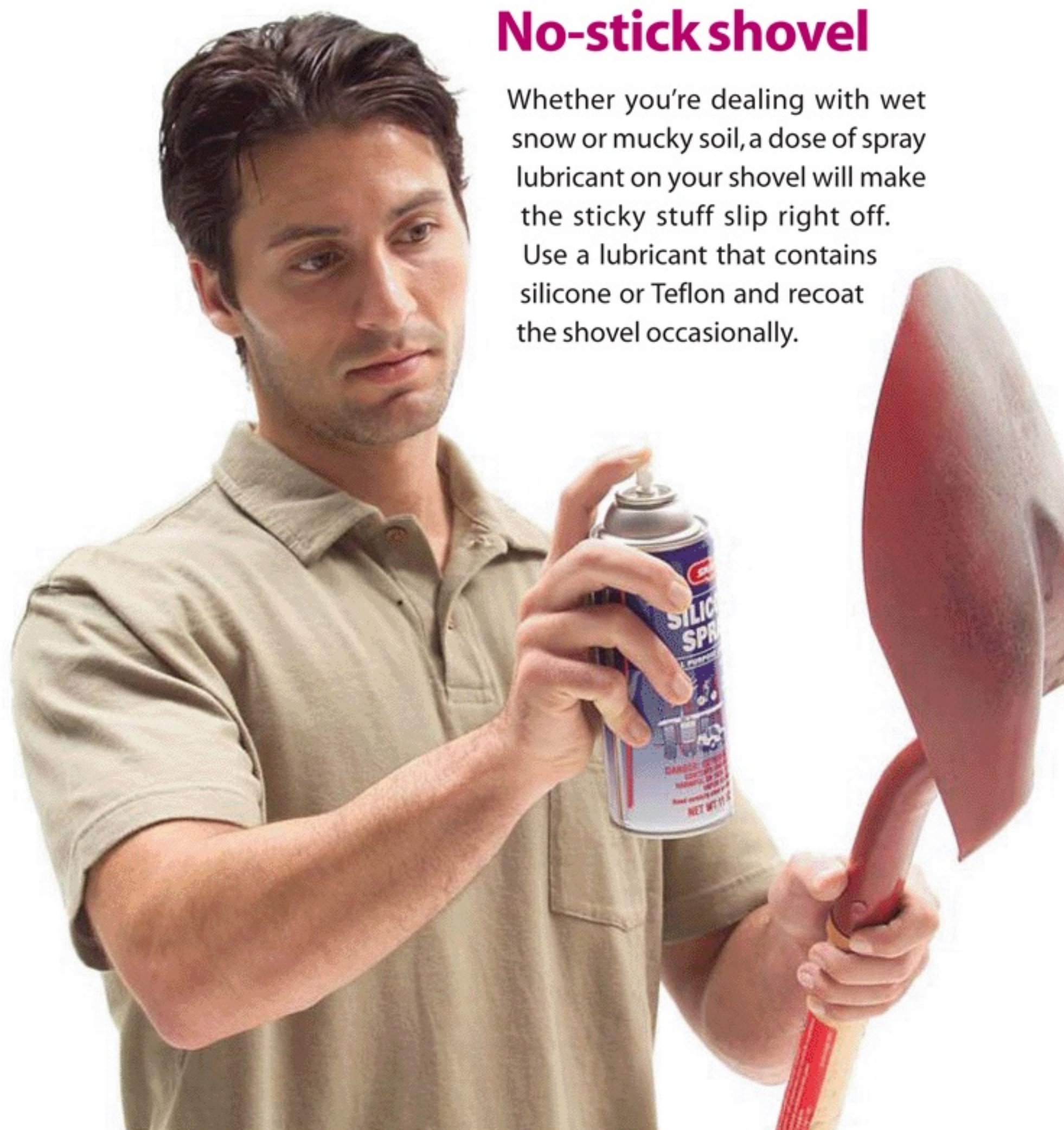
Unless you're super-tall, dusting ceiling fans and other high, out-of-reach objects is a real chore. Wrap a dryer sheet around a clean painting roller and secure the ends with rubber bands. Attach an extension handle to the roller and dust away.



Our favorite tips

No-stick shovel

Whether you're dealing with wet snow or mucky soil, a dose of spray lubricant on your shovel will make the sticky stuff slip right off. Use a lubricant that contains silicone or Teflon and recoat the shovel occasionally.



Squeasy spackling

Removing wall anchors can leave behind deep holes to fill. Instead of using a putty knife and going back to the can each time, put the spackling compound in a plastic bag. Then just cut a notch in one corner and squeeze the compound into the hole. If it's too thick, add a bit of water and knead the bag to mix it in.



The classic tennis ball parking hint

Hanging a tennis ball from the garage ceiling so you know exactly where to stop your vehicle is one of the best tips ever! There are high-tech electronic versions, but the low budget setup of a tennis ball on a string has never lost its appeal—and probably never will.





Stay-put storage crate

A lot of pickup owners keep a milk crate in the back of their truck to hold things like a tow rope and emergency gear. The crate tends to slide around unless you attach it to a tie-down loop in the truck bed. Solve the problem by wrapping rubber cords around the crate to give it some traction. The crate won't slide around, and you've got a great way to store cords, tools and supplies.

Find lost parts with a light

The best way to find something small (an eyeglass screw, a pin, a contact lens, for example) is to get down on the floor with a flashlight and shine the light across the floor. The small object will reflect the light and become easy to spot.



Disguising caulk on concrete

If you're caulking concrete, either to fill a crack or to seal it around the edge, you can make the caulk almost invisible. Simply dust the caulk with dry concrete mix while it's still wet. When it's dry, brush away the excess, and the caulk will virtually disappear.



Spatter-proof painting

When you're painting, it's hard to work around sinks, pipes, toilets and light fixtures without getting paint on them. Painter's tape works at the edges, but it doesn't protect against drips and splatters, especially when you're using a roller. The next time you paint, wrap these obstacles with plastic wrap, a garbage bag or aluminum foil. Cleanup will be quicker, these products conform to any shape, and one of them is always on hand.

OUR FAVORITE TIPS

Fur filter for dog bathing

To keep fur out of the drain when bathing your dog, use a mesh-type scrubbing pad. In a shower, clip the pad to the drain plate with a bobby pin. In a bathtub, wedge two pads under the stopper from two sides. The pads catch fur but let water flow through.



Easy gluing for small repairs

When you're gluing small items like a broken earring or teacup, it can be tough to keep them clamped and still while the glue is setting up. To hold everything together during the repair, embed the parts in reusable adhesive tack (\$3 at hardware stores and home centers). The pieces will stay right where you put them, so you can apply the glue and let it dry undisturbed.

Puddle-free lawn chairs

After a rainstorm, plastic lawn chairs always seem to have a puddle of water in the low spot on the seat and inevitably, someone sits down on it. Even newer plastic lawn chairs that come with a predrilled hole in the bottom still collect water. To solve the soggy bottom problem, pour some water onto the seat to find the puddles and then drill small drain holes in the low spots.



Scratch soap to keep fingernails clean

Whether you're digging in the garden or working on your car, scratch a bar of soap first. The soap will keep grunge from lodging under your fingernails. Unlike soil or grease, the soap will dissolve when you wash your hands.



Root-cutting shovel

For digging in root-filled soil, make a small "V" in the tip of your shovel or trowel with a file or grinder. Keep it sharp with a file. The "V" will trap and slice the roots as you dig.



Bed leg boot

How many times have you stubbed your toe on your metal bed frame? Ouch! Here's a creative way to protect your piggies. Cover the bare metal leg and wheel with a foam beverage can holder. It'll save your toes and prevent carpet dents and hardwood floor scratches to boot!



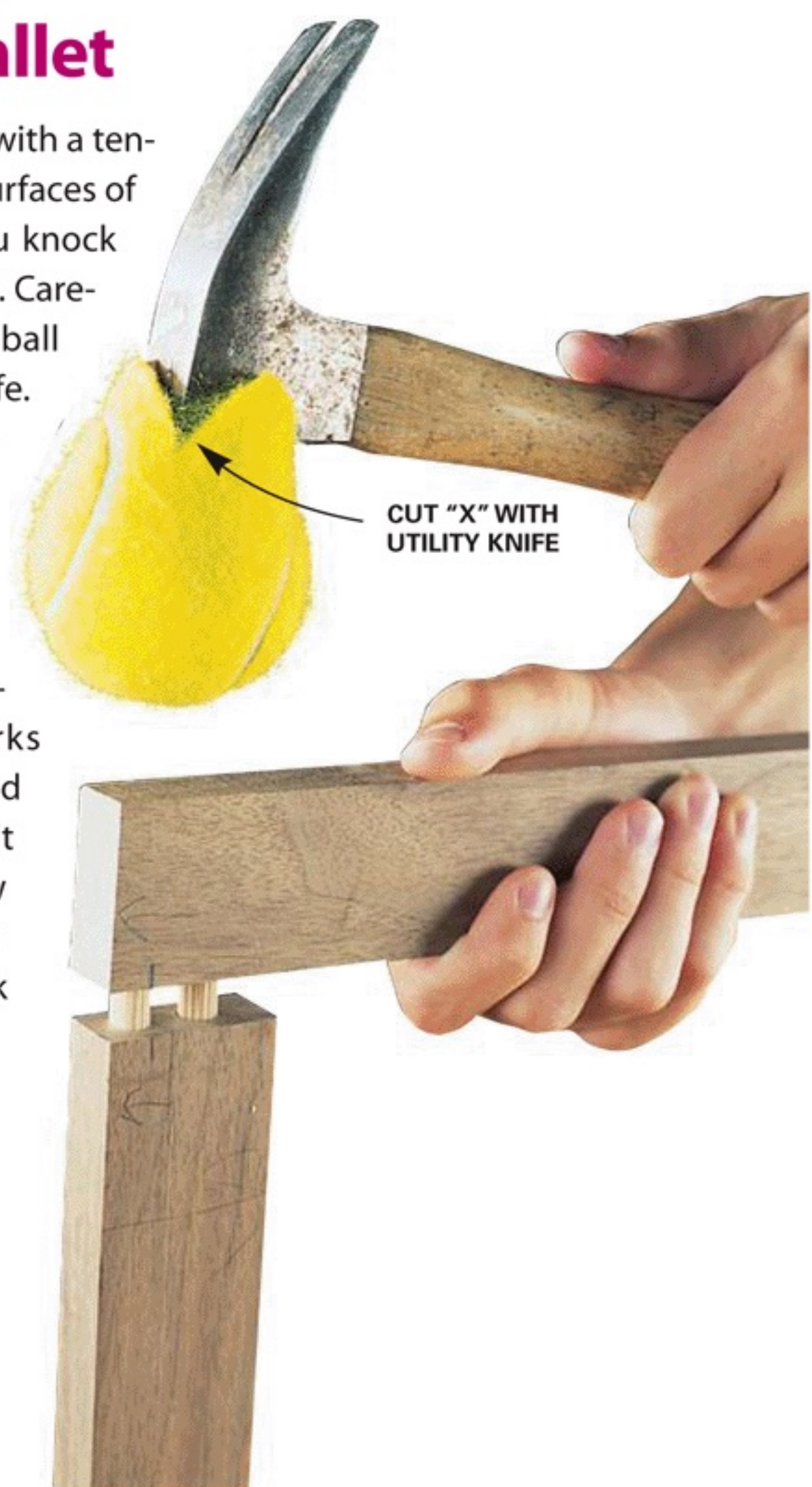
Trash can vent

Having trouble getting full bags of trash out of your trash can? Release the suction and make the job easier by drilling a 1/2-in. hole about 6 in. from the bottom of the can.



Homemade hammer mallet

Cover a metal hammer with a tennis ball to protect the surfaces of your projects when you knock them together or apart. Carefully cut an "X" in the ball with a sharp utility knife. Make it just large enough for the head of an 18- to 24-oz. hammer to slide through. You'll discover that your rubber-bumper hammer works better than a standard rubber hammer, since it concentrates the blow on a small area and doesn't leave black marks.



OUR FAVORITE TIPS



See-through junk bag

If you have a “junk” coffee can you know how hard it can be to find what you need in the mishmash of screws, nails, fasteners and wire connectors. Replace the can with a 1-gallon Ziploc bag!

You can see every single doodad right through the side of the bag, then reach right in and pluck out whatever you need. No more dumping out the whole can on the countertop and pawing through everything to find the right size screw.

Crack cleaner

Cleaning the expansion joints in a sidewalk or the spaces between deck boards doesn't have to be a tedious, on-your-knees job. Insert a “screw-in” hook into the end of a broom and drag the hook through the cracks. The hook will pull out debris, which can then be easily swept up.



Tight-space garage storage

If your garage is too narrow for most shelving systems, here's a great way to store a lot of stuff in very little space. Hang several multilevel wire racks on the wall—the same racks you'd use in a pantry. They hold a ton and hug the wall, so they don't get in the way.



Portable paint colors

Here's a classic tip. Every time you paint a room a new color, dip a stir stick into the can and let it dry. On the stir stick write the name of the paint, the brand, the color number, the sheen and the room that was painted. When you need to match the color or find a complementary one, just grab the stir stick and take it along with you to the paint store.



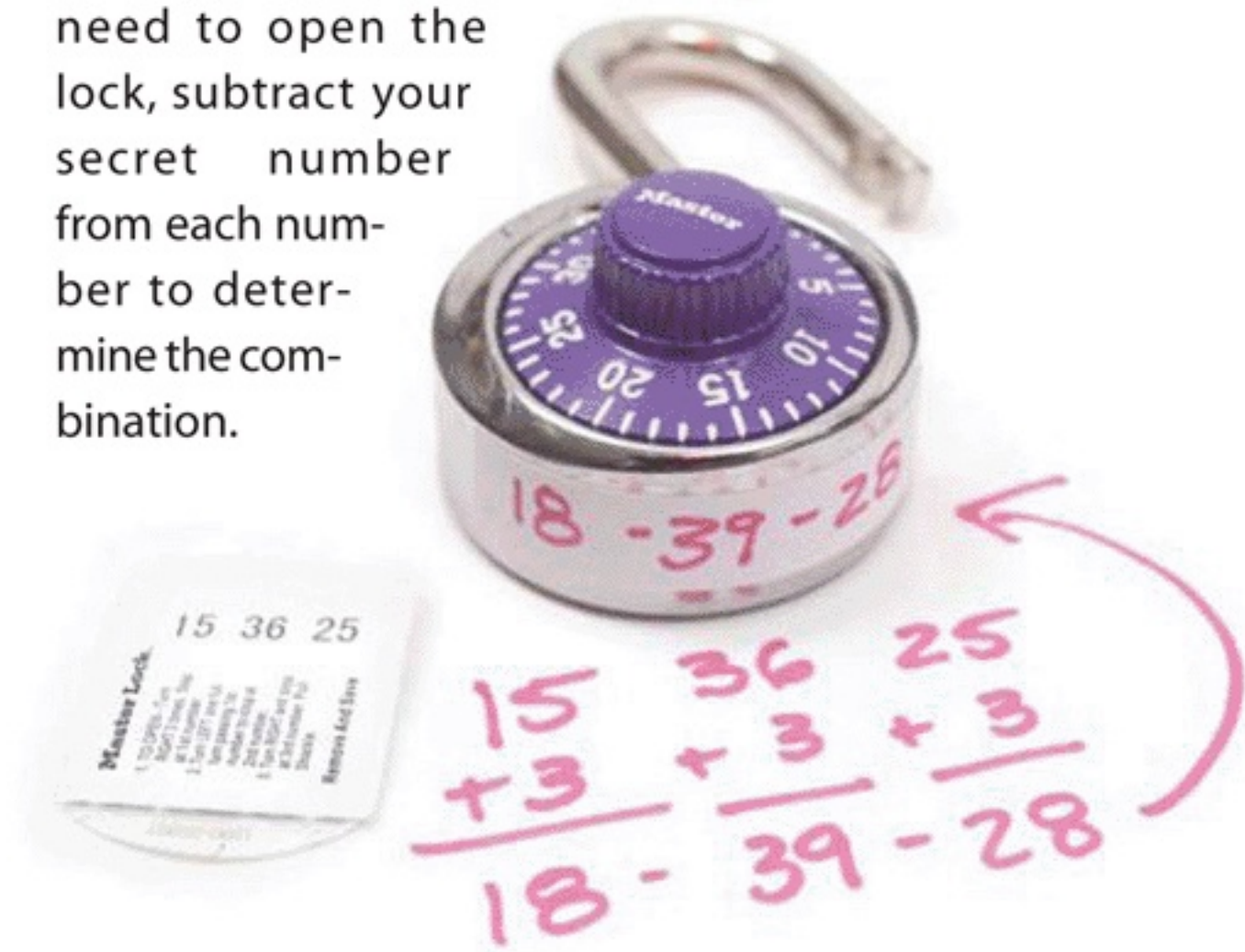
Handy string dispenser

Using a ball of string or twine can be awkward, especially when you pull on the end and the ball rolls out of your hand and halfway across the floor. Here's an idea to make it easier. Use a CD dispenser and stick the ball of string right on the spindle. Drill a hole into the top of the plastic cover, run the string out of the hole and you've got an easy way to control exactly how much string you take each time.



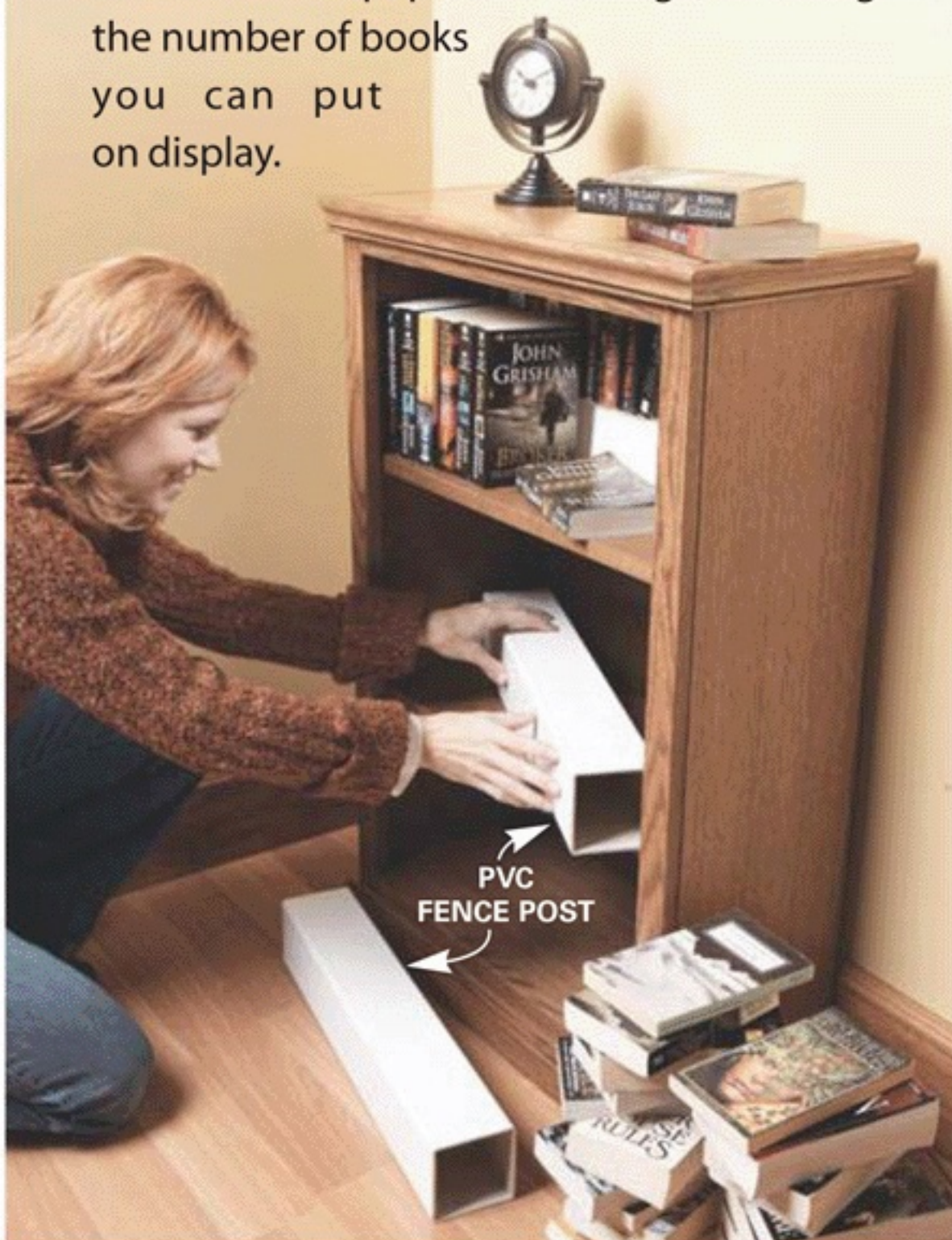
Secret code for combination locks

If you have trouble remembering your lock combination, try this: Pick a secret number and add it to each of the combination numbers. Mark the resulting higher numbers on the lock itself with a label or rotary tool. When you need to open the lock, subtract your secret number from each number to determine the combination.



Stadium-seating bookshelf

Cut a hollow PVC fence post (\$8 at home centers) to the length of your bookshelf and push it to the back of the shelf. This creates a second tier for paperback storage, doubling the number of books you can put on display.



Golf tee in the screw hole



Often the only problem with a sagging door or a door that won't latch is a loose hinge or strike plate. And that loose part is usually the result of a stripped screw hole.

The solution is to apply a dab of epoxy to a golf tee, then tap the tee into the screw hole. After an hour, chisel off the excess and you've got solid wood that will hold new screws. For tiny holes, use a few toothpicks instead of a tee.

Self-selecting key

Drill a second keyring hole near the edge of your house key so it will hang at an angle and stand out from the others. No more fumbling with your key ring in the dark trying to find the house key.



Working with extension ladders



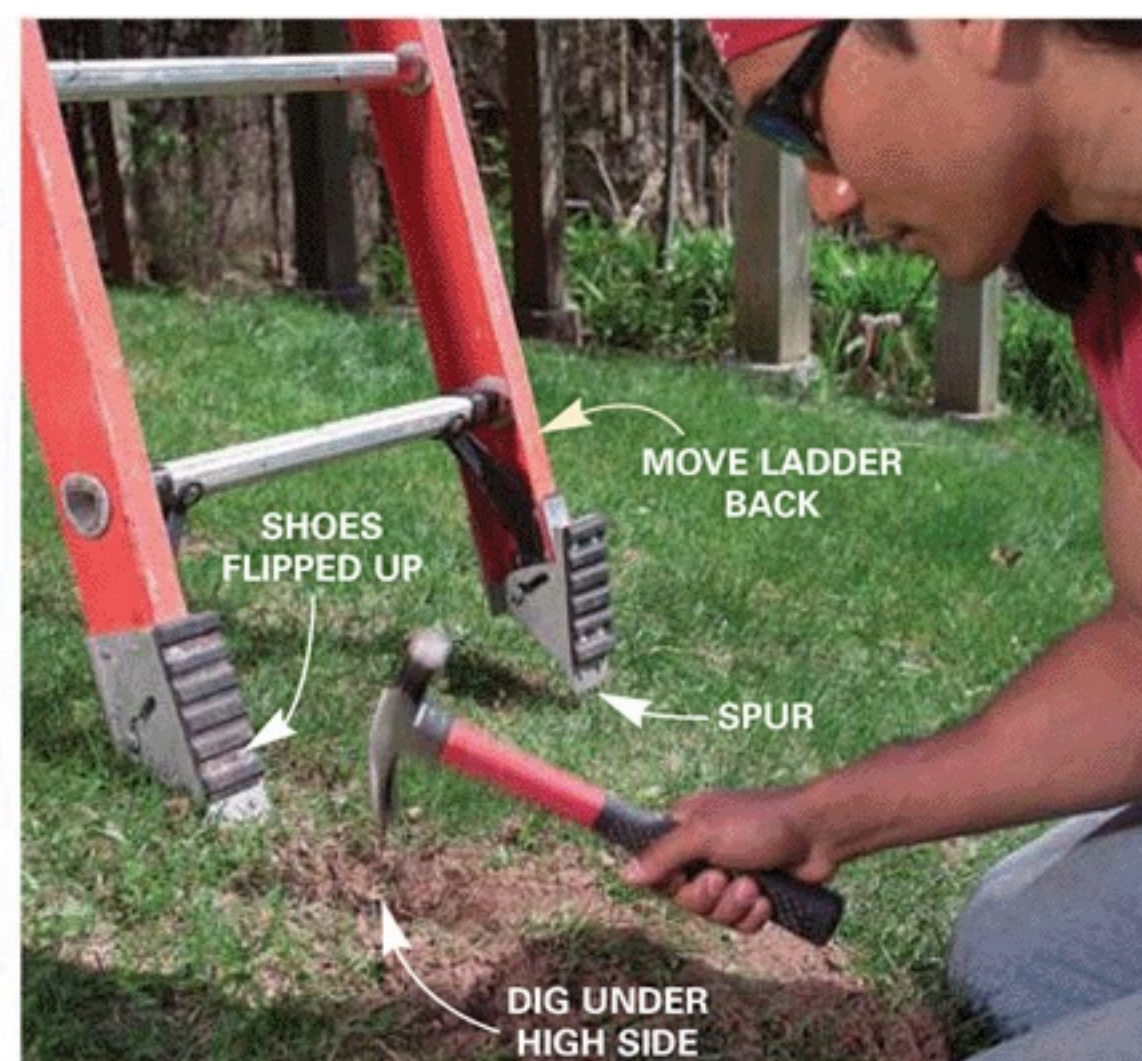
Set your ladder at the correct angle. Put your toes against the ladder's feet. Stand straight up and extend your arms. The palms of your hands should just reach the ladder's rung.

Get the angle right

Setting the ladder at the correct angle is one of the most important steps to a safe ladder setup. Too steep and it could tip over backward. Too much angle and it could bend or the bottom could slide out. The photo shows how to get the angle just right. If an obstacle prevents you from setting the ladder at the correct angle, don't take chances—consider using scaffolding instead.

Secure the feet

In addition to establishing a level base, make sure the feet can't slip backward. On soft ground, flip up the ladder shoes so the spurs poke into the ground. On decks, it's a simple matter to screw down a cleat (photo). Before you set up the ladder on hard surfaces, clean the bottom of the ladder feet and sweep away sand and dirt that could cause the ladder to slip.



Dig a trench under the high-side foot when your ladder is on uneven ground. Flip the shoes up when you're setting up the ladder on soft ground. The spurs will dig in and prevent the ladder from slipping.

Provide a level base

Even with the ladder at the correct angle, it can still tip sideways if the feet aren't level with each other and on solid ground.

It's unsafe to stack boards, bricks or other stuff under one of the feet to level the ladder. Instead, scrape out a shallow trench under the high-side foot (photo).

If digging is impractical because your site is steeply sloped, or you want to set the ladder on stairs or some other uneven, hard surface, don't opt for a makeshift solution.



Jump on the lowest rung to set the ladder firmly and to test for stability. If the ladder tips to one side, move it aside and adjust the depth of the hole.

Instead, buy adjustable leg-leveling extensions (\$40 to \$80) that bolt onto the bottom of your ladder. To see what's available, check the ladder manufacturer's catalog or a store that sells your ladder brand.

Secure the top against a wall

Providing a stable base is only half the battle. You also have to make sure the top of the ladder can't slide when the rails rest against a wall. Make sure the ladder is vertical and the top is resting on an even surface. Angling the ladder to the left or right to reach a remote spot is asking for trouble.

There are a couple of add-on accessories that help stabilize the top of ladders. The first is a pair of rubber or soft plastic "mitts" (\$9 to \$12 at hardware stores and home centers) that slip over the top of the ladder's rails. They provide a better grip on the siding and protect it from ladder damage. Ladder stabilizers are another great add-on accessory (photo below). The large rubber pads grip almost any surface to keep the top from slipping sideways and help spread out the load to prevent damage to fragile siding materials like vinyl or aluminum. Stabilizers also span window openings and hold the ladder away from the building to allow work on gutters and overhangs. These range in price from \$45 to \$70 and are available almost everywhere ladders are sold. They are highly recommended for any kind of extensive work, such as washing and painting siding.



Add a ladder stabilizer accessory to the top of your ladder to span windows and to provide extra stability. Follow the stabilizer installation instructions carefully.



Secure the top of your ladder by tying it to a solid anchor. Make a reusable anchoring rig by screwing two 3/8-in. x 2-in. eye screws into a 32-in. length of 2x4. Then screw the 2x4 to the fascia with 3-in. deck screws.

Tie the top for extra security

If you plan to make several trips up and down while the ladder is in the same location, it pays to secure the top to keep it from sliding. This is especially important if you'll be stepping onto a roof (photo above). Ties will prevent the ladder from sliding sideways as you step to and from the roof. Using the setup shown here has the added advantage of protecting the edge of the shingles. It will only take a few minutes to screw the two eye screws into a 2x4 and the 2x4 to the fascia board. You can keep the rig handy for future use. You'll be left with a few small screw holes in the fascia, but that's a small price to pay for this extra measure of security.

Here are a few more tips for steadying the top of the ladder: If you have a choice, set up the ladder where there's an adjoining wall, chimney or other structure to hold it in place. Also, if you regularly set the ladder against the same location on your metal gutters, add extra gutter straps to strengthen the gutter in the area where the ladder top rests. Then install eye screws out of sight above the gutter to provide anchors for securing your ladder with rope or wire.

Bonus section: Instant projects

Simple window planter

You can put together this simple window planter in less than an hour. For each planter, you'll need three 6-in. clay pots, 3 ft. each of 1x10 and 1x3, and 2 ft. of 2x8.

Cut the 1x10 and 1x3 to length (see photos for dimensions). Pot diameters vary, so size the holes by scribing and cutting out a 6-in. circle from cardboard to ensure that the pot will rest on its rim (Photo 1). Keep testing until you find the size. Then lay out and cut the openings.

Use a 5-gallon pail lid to scribe the bracket curves (Photo 2). Make sure the grain runs parallel to the shelf for strength. Smooth off the rough edges and paint the parts before assembly—especially if you want the two-tone look. Then screw the parts together with 2-in. exterior screws.

Mount the shelf to the wall by screwing through the hanging strip into the wall framing.



1 Mark the 6-in.-diameter holes with a compass. Then drill 1/2-in. starter holes and cut out the openings with a jigsaw.



2 Mark the notch for the hanging strip and both 1-1/4-in. ends on the brackets. Draw the curve and cut the openings with a jigsaw.



3 Predrill and screw the hanging strip to the brackets. Then center and screw the shelf to the brackets and to the hanging strip.

2-hour, \$25 campfire bench



Need outdoor seating in a hurry? This simple bench, based on author and ecologist Aldo Leopold's classic design, can be constructed in a couple of hours. All it takes is two boards, some glue and 18 screws, for a cost of less than \$25.

Cut the legs from a 2x8 x 10-ft. piece of rot-resistant wood (Photo 1). Cut the seat and backrest from an 8-ft. 2x8.

Lay out and assemble the sides as mirror images, using the seat and back pieces for alignment (Photo 2). Join the legs with three 2-1/2-in. deck screws and construction adhesive. Predrill

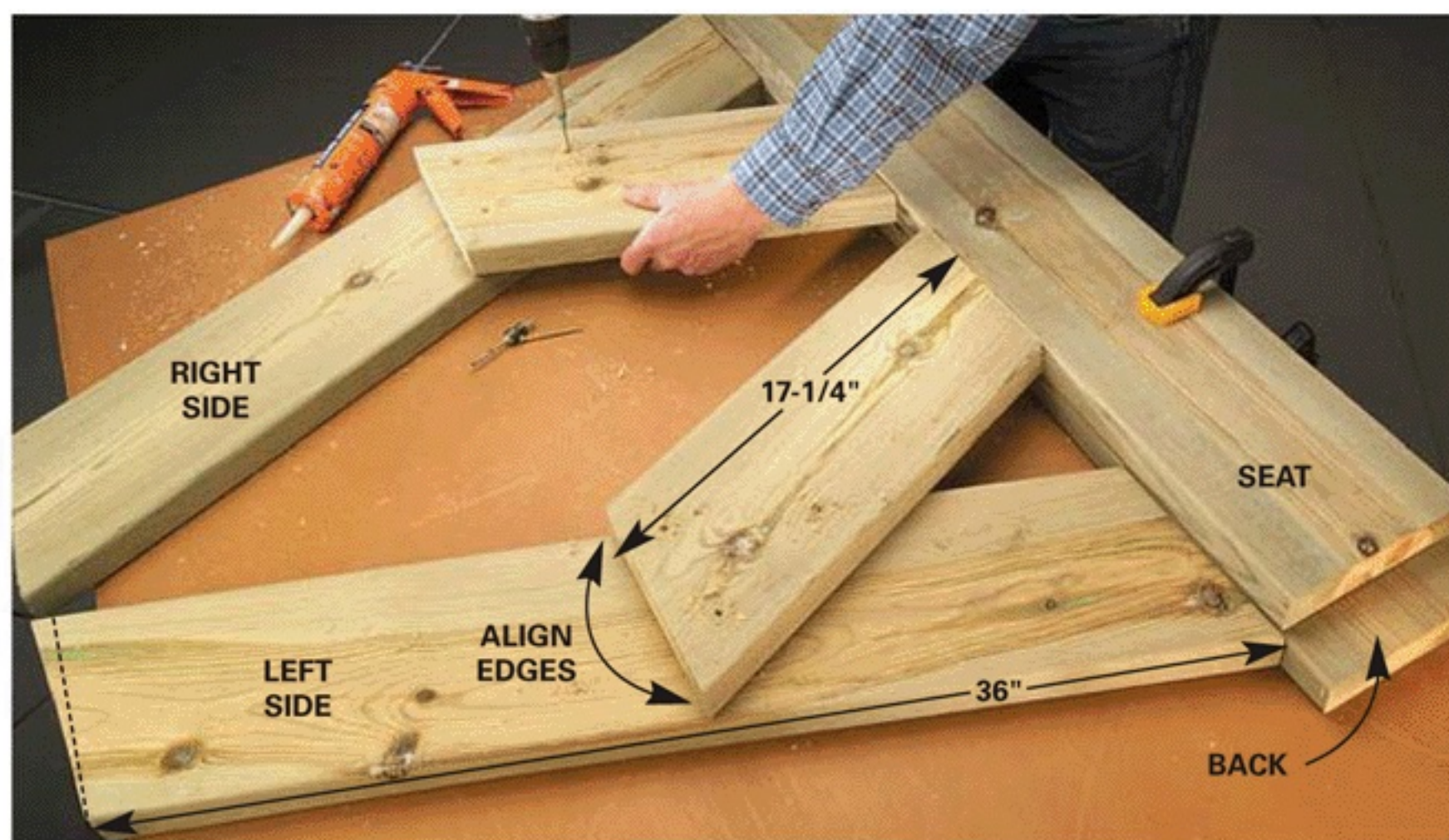
all the screw holes with a countersink bit to avoid splitting the wood. Finally, set the sides up parallel to each other and glue and screw the seat and back into place. Finish the bench with a coat of exterior oil or stain.

Cutting list

Rear legs: 2x8 x 17-1/4" (22-1/2-degree cuts)
 Front legs: 2x8 x 36" (22-1/2-degree cuts)
 Seat: 2x8 x 42"
 Back: 2x8 x 45"



1 Starting at one end of a 10-ft. board, make the same 22-1/2-degree cut five times to create the four legs.



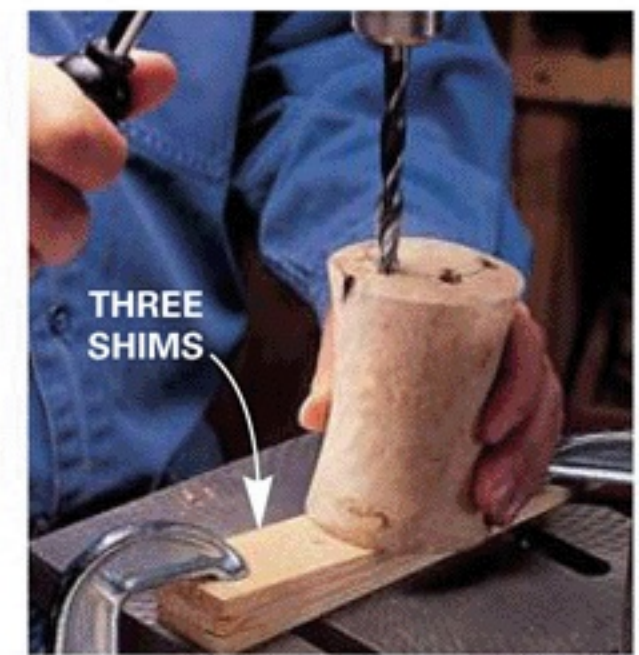
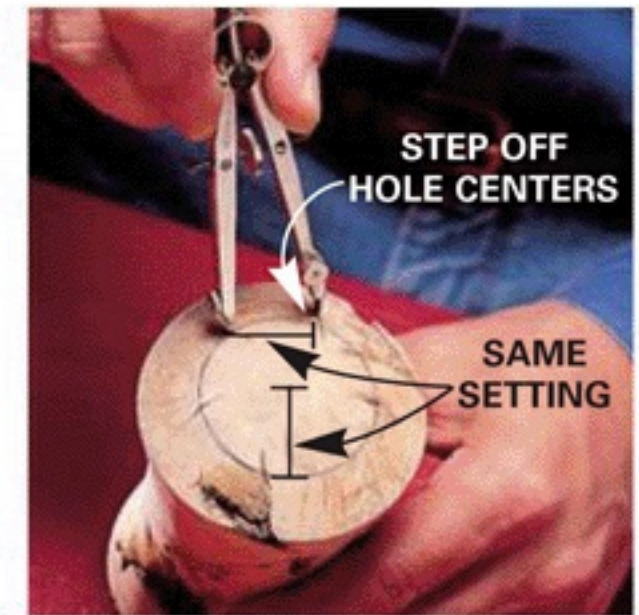
2 Clamp the seat and back to the workbench as a stop, then predrill, glue and screw the rear legs to the front legs.

Quick & easy gift projects



Turned pen holder

Make one of these and get ready to fill gift orders! On a lathe, turn a 3-in.-square x 6-in.-long hardwood blank into a cylinder that's 4-1/2 in. long with a narrowed waist, curved top and flat bottom. Sand smooth. With a compass, draw a circle on the top and mark six hole locations on the circle. Why six? When you leave the compass at the same radius and "step" it around the circle, it marks off six equally spaced points. After marking, use a 3/8-in. brad point bit to drill the six holes at 10 degrees and 2 in. deep. If your drill press has no angle adjustment, glue three shims together and clamp them to the table to make a 10-degree angled ramp. Finish the pen holder with Danish oil, and load with pens.



Swedish boot scraper

Here's a traditional Swedish farm accessory for gunk-laden soles. The dimensions are not critical, but be sure the edges of the slats are fairly sharp—they're what makes the boot scraper work. Cut slats to length, then cut triangular openings on the side of a pair of 2x2s. A radial arm saw works well for this, but a table saw or band saw will also make the cut. Trim the 2x2s to length, predrill, and use galvanized screws to attach the slats from underneath.



Shop stool/stepladder



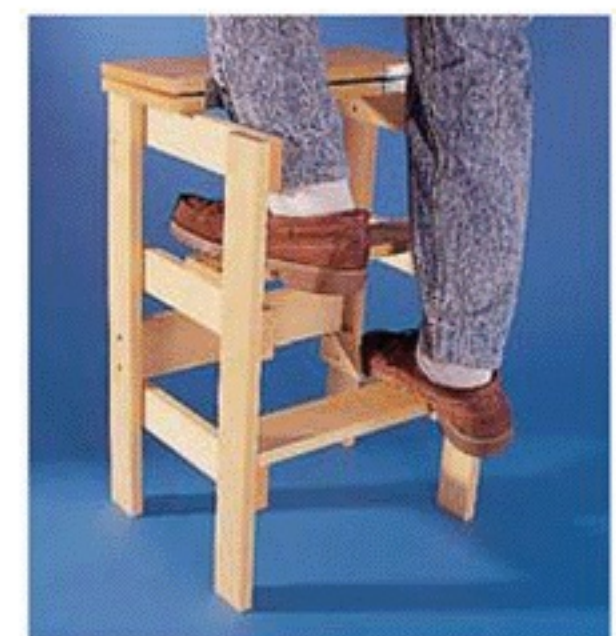
Here's a double-duty project you'll wonder how you lived without. It's a solid, comfortable stool, and when you flip over the hinged seat board, it becomes a stepladder.

Assemble the two sides first. Drill pilot holes, countersink and attach the leg braces to the legs with 1-1/4-in. drywall screws and wood glue. Screw the top leg brace flush with the top of the legs, and the lower braces 8-1/2 in. and 16-3/4 in. up from the lower ends of the legs. Attach the step boards and the back brace with 2-in. drywall screws and glue. Round over the top outside edges of the seat boards with a 1/4-in. round-over bit. Connect the seat boards with two 2-in.-wide butt hinges, and fasten the rear seat board to the top leg brace with 2-in. drywall screws and glue.

Cutting list

1x4 Pine: 4 legs, 25 in. long; 6 leg braces, 14 in. long; 2 steps and 1 back brace, 16 in. long

1x8 Pine: 2 seat boards, 18 in. long x 7-1/4 in. wide





Sliding bookend

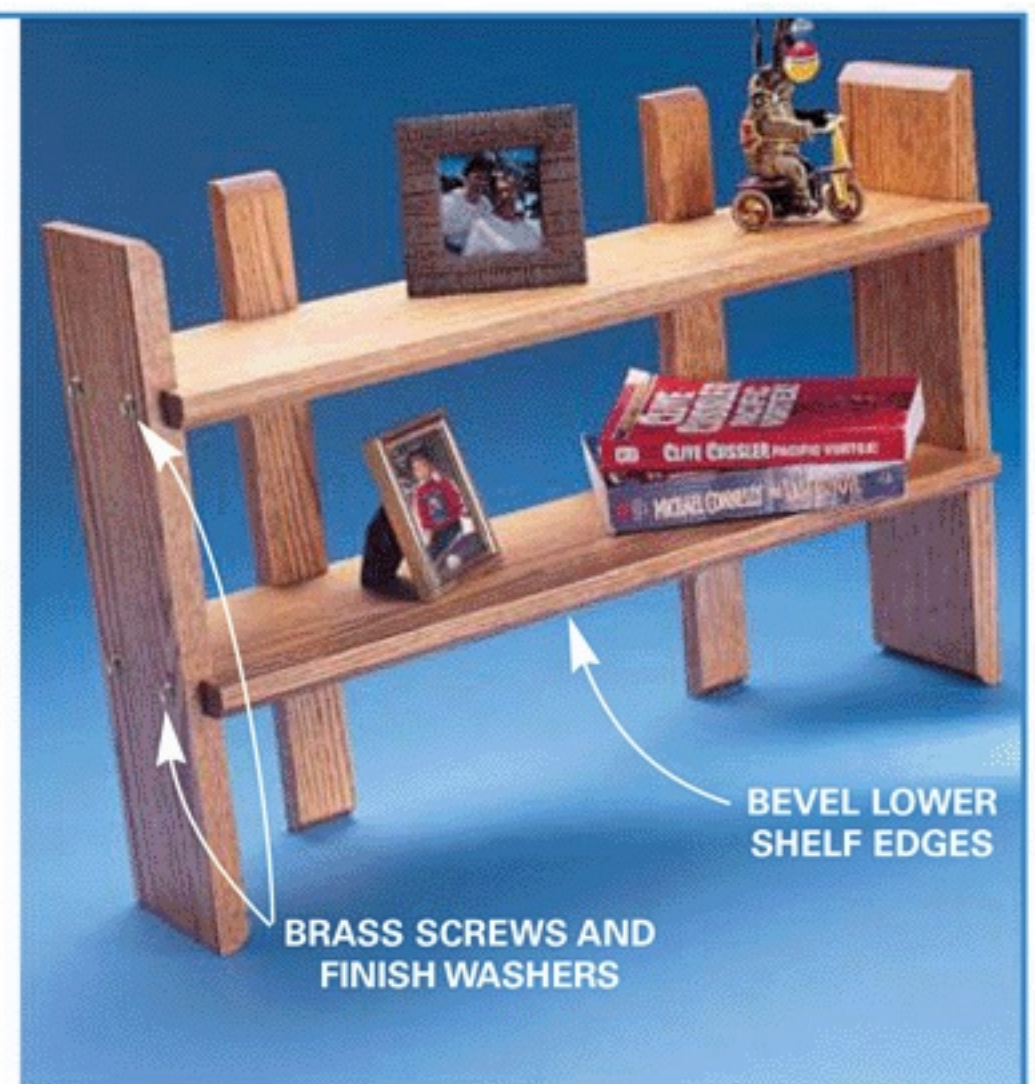
To corral shelf-dwelling books or CDs that like to wander, cut 3/4-in.-thick hardwood pieces into 6-in. x 6-in. squares. Use a band saw or jigsaw to cut a slot along one edge (with the grain) that's a smidgen wider than the shelf thickness. Stop the notch 3/4 in. from the other edge. Finish the bookend and slide it on the shelf.

Petite shelves

Turn a single 3-ft.-long, 1x12 hardwood board into some small shelves to organize a desk top or counter. Cut off a 21-in.-long board for the shelves, rip it in the middle to make two shelves, and cut 45-degree bevels on the two long front edges with a router or table saw. Bevel the ends of the other board,



cut dados, which are grooves cut into the wood with a router or a table saw with a dado blade, crosswise (cut a dado on scrap and test-fit the shelves first!) and cut it into four narrower boards, two at 1-3/8 in. wide and two at 4 in. Finish, then assemble with brass screws and finish washers.



Easy-to-build knife block

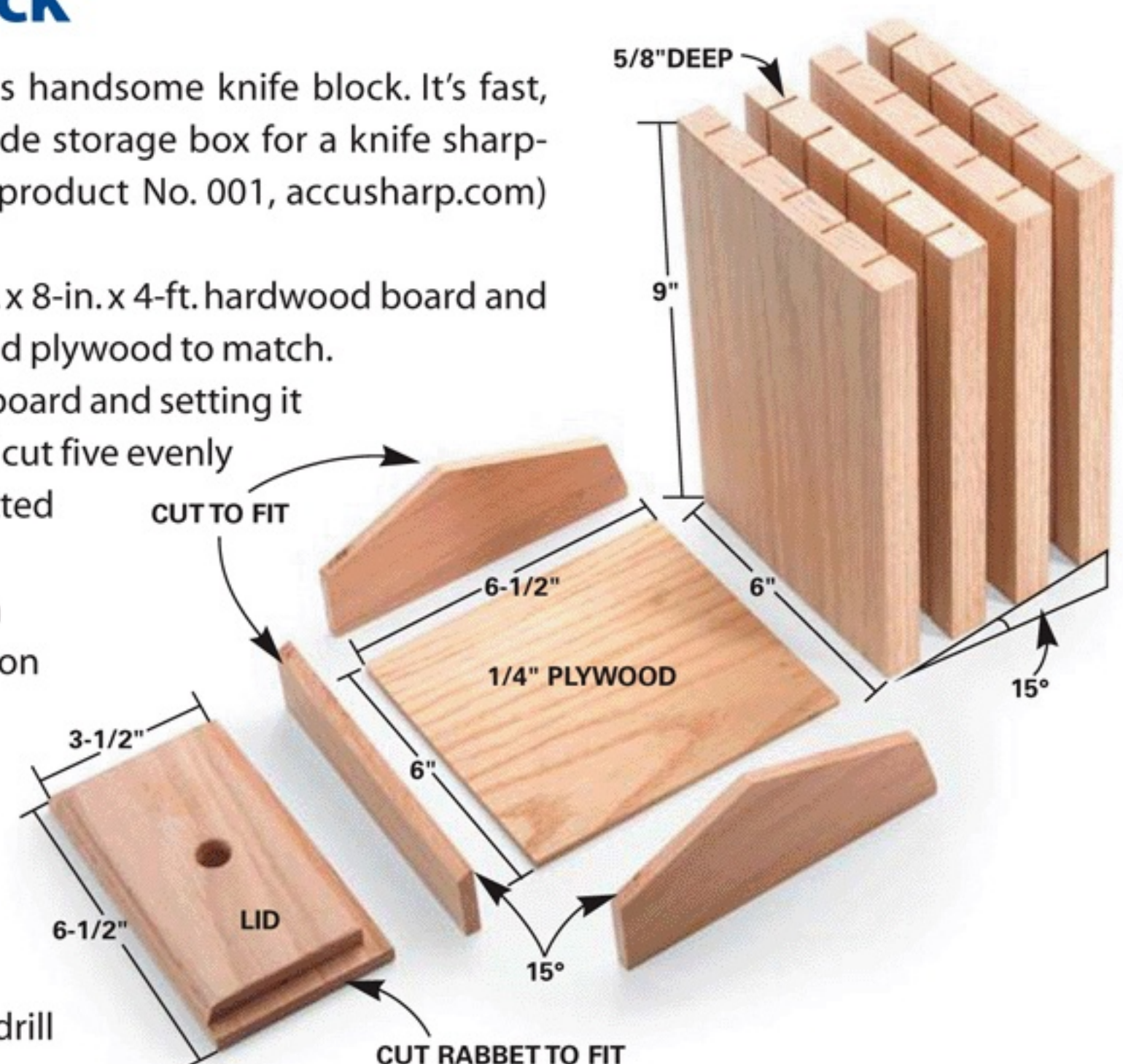


Display your kitchen cutlery in style with this handsome knife block. It's fast, easy and fun to build, and includes a 6-in.-wide storage box for a knife sharpener. The Accusharp knife sharpener (\$11, product No. 001, accusharp.com) tucks neatly inside.

To build one, you only need a 3/4-in. x 8-in. x 4-ft. hardwood board and a 6-in. x 6-1/2-in. piece of 1/4-in. hardwood plywood to match.

Begin by cutting off a 10-in. length of the board and setting it aside. Rip the remaining 38-in. board to 6 in. wide and cut five evenly spaced saw kerfs 5/8 in. deep along one face. Crosscut the slotted board into four 9-in. pieces and glue them into a block, being careful not to slop glue into the saw kerfs (you can clean them out with a knife before the glue dries). Saw a 15-degree angle on one end and screw the plywood piece under the angled end of the block.

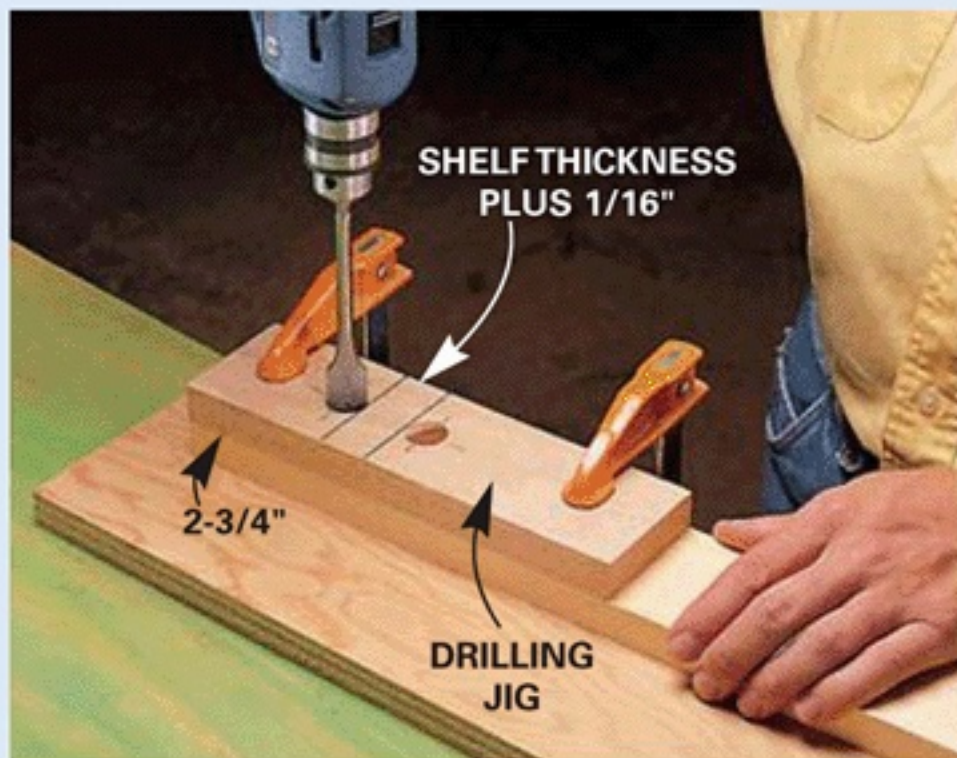
Cut the 6-1/2-in. x 3-1/2-in. lid from the leftover board, and slice the remaining piece into 1/4-in.-thick pieces for the sides and end of the box. Glue them around the plywood floor. Cut a rabbet, which is a groove cut into the edge of the wood, on three sides of the lid so it fits snugly on the box and drill a 5/8-in. hole for a finger pull. Then just add a finish.



Portable bookshelf

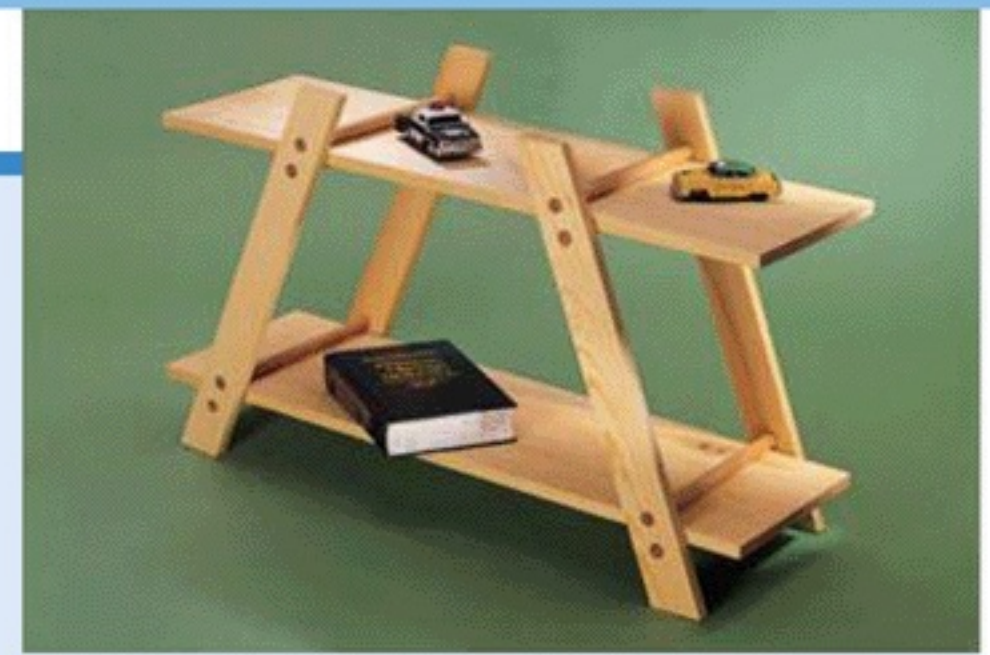
Here's a cool knockdown shelf for a dorm room or den. You just slide the shelves between the dowels, and they pinch the shelves to stiffen the bookshelf. It works great if you're careful about two things: Make the space between the dowel holes exactly 1/16 in. wider than the thickness of the shelf board. And be sure the shelf thickness is the same from end to end and side to side.

After test-fitting a dowel in a trial hole (you want a tight fit), drill holes in a jig board so the space between the holes is your shelf thickness plus 1/16 in. Clamp the jig board on the ends of the legs and drill the holes. Cut the dowels 1-3/4 in. longer than the shelf width, then dry-assemble (no glue). Mark the angled ends of the legs parallel to the shelves and cut off the tips to make the legs sit flat. Disassemble and glue the dowels in the leg holes. When the glue dries, slide the shelves in and load them up.



Cutting list

Perfectly flat 1x12 lumber or plywood
 2 shelves: 11-1/4" wide x 3' long
 4 risers: 2-1/4" wide x 24" long
 8 dowels: 3/4" dia. x 13" long



Simple stepstool

Here's a great gift idea that will draw raves. The joints are accurately made in seconds with a plate joiner, but don't tell your admirers. You'll also need a miter saw to crosscut the boards and a jigsaw to cut the half-circles in the risers. Here's the lumber you'll need:

- One 8-ft. 1x8 clear hardwood board (actual width is 7-1/4 in. and actual thickness is 3/4 in.). Oak is a good choice because it's readily available at home centers.
- One 3-ft. 1x3 hardwood board (actual width is 2-1/2 in. and actual thickness is 3/4 in.).

Cut the 8-ft. board into:

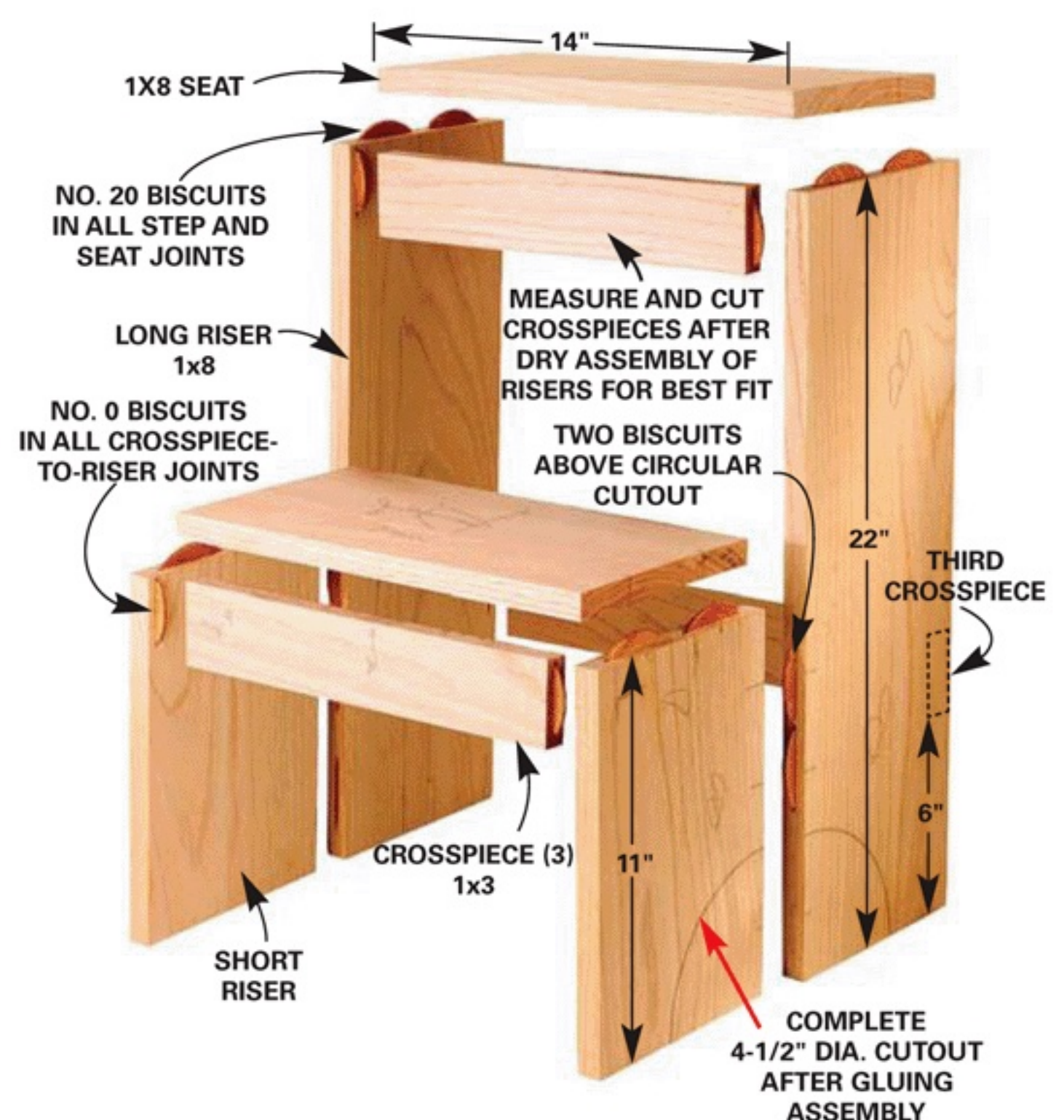
- Two 22-in. riser boards
- One 14-in. step board
- Two 11-in. riser boards
- One 14-in. seat board

You'll use 94 in. of the 96-in. board, so make practice cuts on a scrap board first to check the angle and length of cut. Don't cut the 3-ft. 1x3 board until you've dry-assembled the step, seat and risers and measured for a perfect fit.



To create two risers, join the 11-in. boards to the 22-in. boards with No. 20 biscuits and glue. Let dry 30 minutes, then lay the step and seat across and mark for two No. 20 biscuits at each joint. Dry-assemble the step, seat and risers with biscuits, then cut and snugly fit the crosspieces. Mark the riser-to-crosspiece joint and cut slots

for No. 0 biscuits. Glue and firmly clamp the step, seat and crosspieces to the risers. Check for square and let dry 30 minutes, then cut out the 4-1/2-in.-diameter arc on the bottom of the risers to create the legs. Finish-sand and apply your favorite finish. This project is designed for use on hard-surface flooring only—not carpeting.

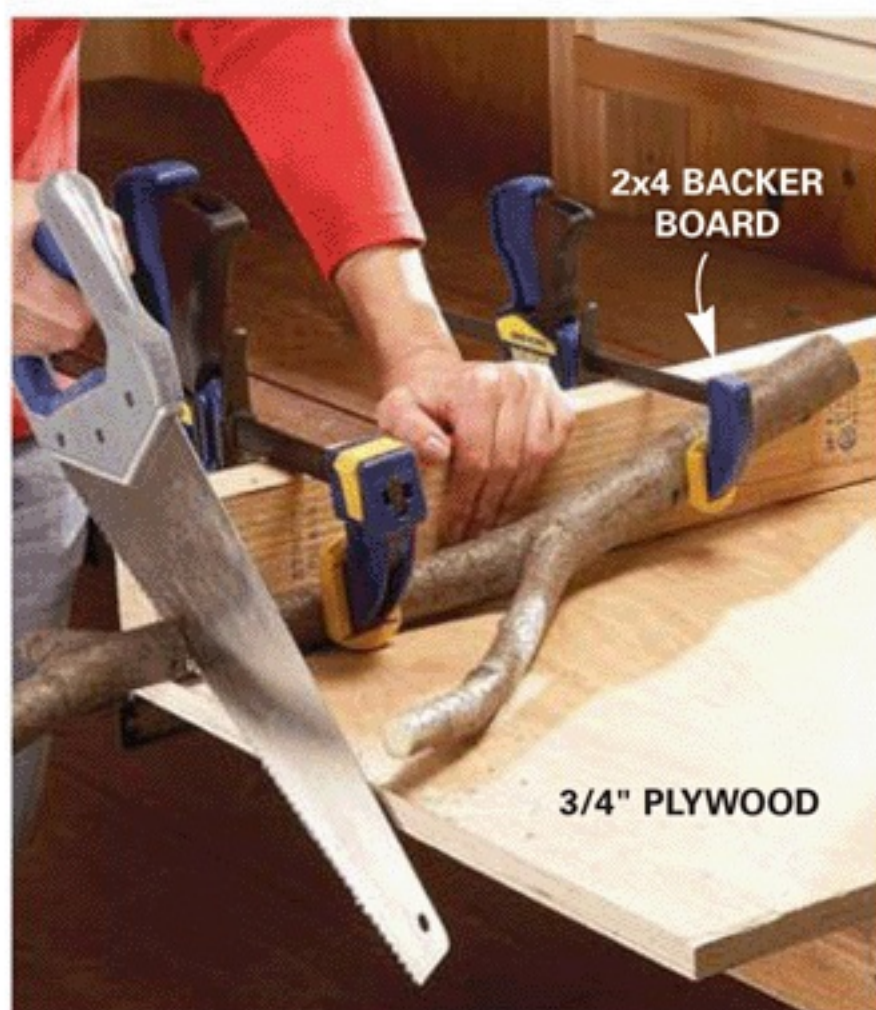


Charming cottage branch shelf

Bring a bit of nature indoors with this simple branch-supported shelf. You'll have to find two forked branches about 1 in. in diameter, with one relatively straight side that will sit as flush to the wall as possible. The branches shown were trimmed from a crab apple, but you can use any smooth-barked tree. The shelf is 12-in. Melamine closet shelving with the ends painted white. Yours can be any wood you like, but keep the width to 12 in. or less.

To make square cuts on the branch ends, create a jig with scrap wood and a 2x4. Clamp the jig to your workbench. Then clamp each branch to the 2x4 and use the bottom edge of the jig to guide your cuts (Photo 1). Cut the branches above the crotch where the ends will be wide enough to support the shelf—one near the wall, the other close to the edge.

Clamp the shelf to the jig and trace around the branch. Drill pilot holes near the bottom of the marks at the front edge of the shelf so the screw tips won't poke through the branch (Photo 2). Bore countersink holes for the screw heads at the top of the shelf. Then hold the branches tight to the shelf while screwing them in. Hold the shelf level while you drill two holes through each branch into the dry-wall to mark the wall for drywall anchors. Screw your new shelf to the wall and fill it with your treasures.



1 Build a simple jig to hold the branch steady. Cut the ends flush with the end of the jig.



2 Trace around the branches where they touch the shelf bottom, then drill the holes and screw the shelf to the branches.



3 Drill pilot holes near the top and bottom of the branch into the dry-wall. Then sink drywall anchors and screw the shelf to the wall.

Sleek and simple coat and hat rack

Organize your hallway or mudroom with this simple, attractive coat and hat rack. You just cut the boards to fit your space, paint them, outfit them with different kinds of hooks to suit your needs and then screw them to the wall. For the rack shown, 6-ft.-long 1x4s were used, but use whatever length works for you and the space available. Shown is poplar, which is the best choice if you want a painted finish. If you're after a natural wood look, choose any species you want.

Finish the boards first and then attach your hooks. Use drawer pulls down the middle and a robe hook near the top to hold backpacks and larger items. You'll find hooks in a tremendous range of styles, colors and prices at hardware stores and online retailers.

Attach the boards to studs, or to the drywall with screw-in drywall anchors (E-Z Ancor is one brand). Drive three screws in each board: one at the top, one in the middle and one at the bottom. Now you have a great place to hang your hat.



1 Drive your screws partway into each board so the screw tips poke out the back. Place the boards where you want them, and press hard to mark the spots for your drywall anchors.



2 Screw your anchors into each marked spot and then attach the boards.

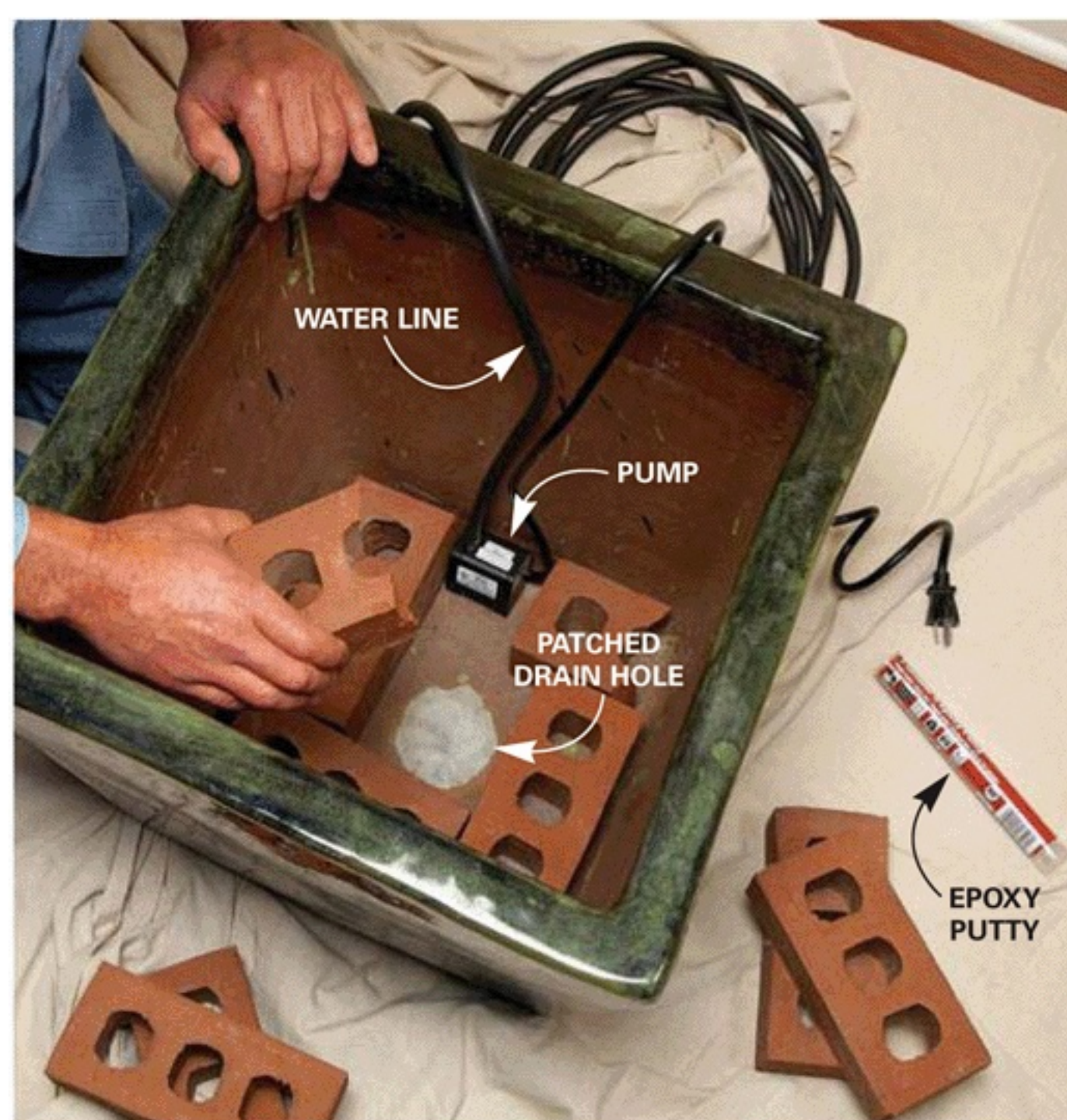


Easy indoor fountain

Create this indoor water fountain using a planter, rocks and a small pond pump for under \$100.

Plug the drain hole of a large glazed ceramic or resin planter with plumber's epoxy putty. After it cures, fill the planter with water for a day or two to confirm that it won't leak. Place the planter exactly where you want it before adding the rocks and water. It'll be very heavy once it's done.

Stack bricks or stones around and above a small pond pump (about 40 gph) to about two-thirds the depth of the vessel. Then cut the water line to length and add a restrictor valve. Shown is a 3/8-in. PEX valve (clamp it if the hose comes loose under pressure). Or choose a "pinch"-type valve, found with pond accessories at home centers. You can change the look and sound of the water fountain by tinkering with the water flow rate and the shape, size and arrangement of your stones. That's the fun part!



1 Place the pump in the bottom of the container with the tubing attached and the switch on. Fill around and above it with bricks or stones.



2 Create a ledge with a flat stone for a mini waterfall. Adjust the flow with the valve and orient the water line until you achieve a pleasing result. Hide the water line with more stones.

Rustic rebar plant cage

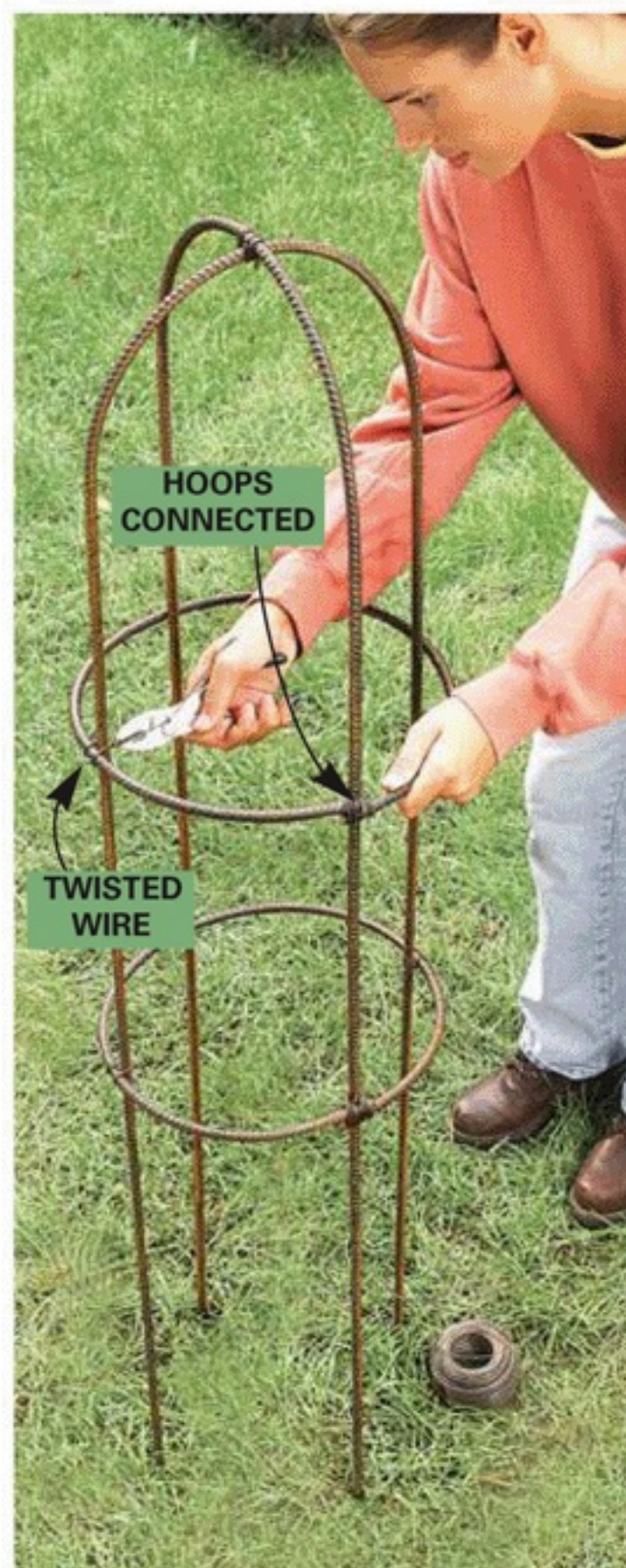


Covered with vines, this rustic metal plant cage makes an attractive addition to your flower garden. In the vegetable patch, it's a great support for peppers or tomatoes. It's built from inexpensive concrete reinforcing steel (rebar) connected by twisted wire.

You'll need three 10-ft. lengths of 3/8-in. (No. 3) rebar (you'll have a little extra) and about 20 ft. of 16- or 18-gauge wire. You'll find 3/8-in. rebar at home centers (\$6 for a 20-ft. length). Ask the supplier to cut standard 20-ft. lengths in half to make it easier to haul.

1 Bend 10-ft. lengths of 3/8-in. rebar around a 5-gallon bucket as shown. Drill two holes in the side of the bucket and loop a wire through the holes and around the rebar to hold it in place while you do the bending. Slip a 3-ft. length of 1/2-in. pipe over the rebar for better leverage and control. Use the same technique for bending the hoops, but wrap the rebar completely around the bucket to form a circle. Then cut the straight section off with a hacksaw, leaving the hoop and a few inches of overlap. Wrap and twist-tie wire around the overlap to form the two hoops.

2 Stack the two hoops on the ground. Poke the ends of the two arches a few inches into the ground inside the hoops. Twist a 12-in. length of wire around the intersection of the two arches to secure them. Cut off the extra wire. Then slide the first loop up to about 16 in. from the top and wire it in place. Stand back and eyeball the hoop to make sure it's level and the uprights are evenly spaced before you tighten the tie wires. Repeat this process for the second hoop, leaving about 16 in. between hoops.



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8 clever ways to use PVC pipe

continued from inside front cover



String saw pipe cutter

Amaze your friends and mystify your neighbors by cutting PVC pipe with a string. It's a great trick to know if you have to cut pipe that's buried in a wall or some other tight spot. To test this amazing hint, a mason's line was used to cut through 2-in. PVC pipe in less than a minute.

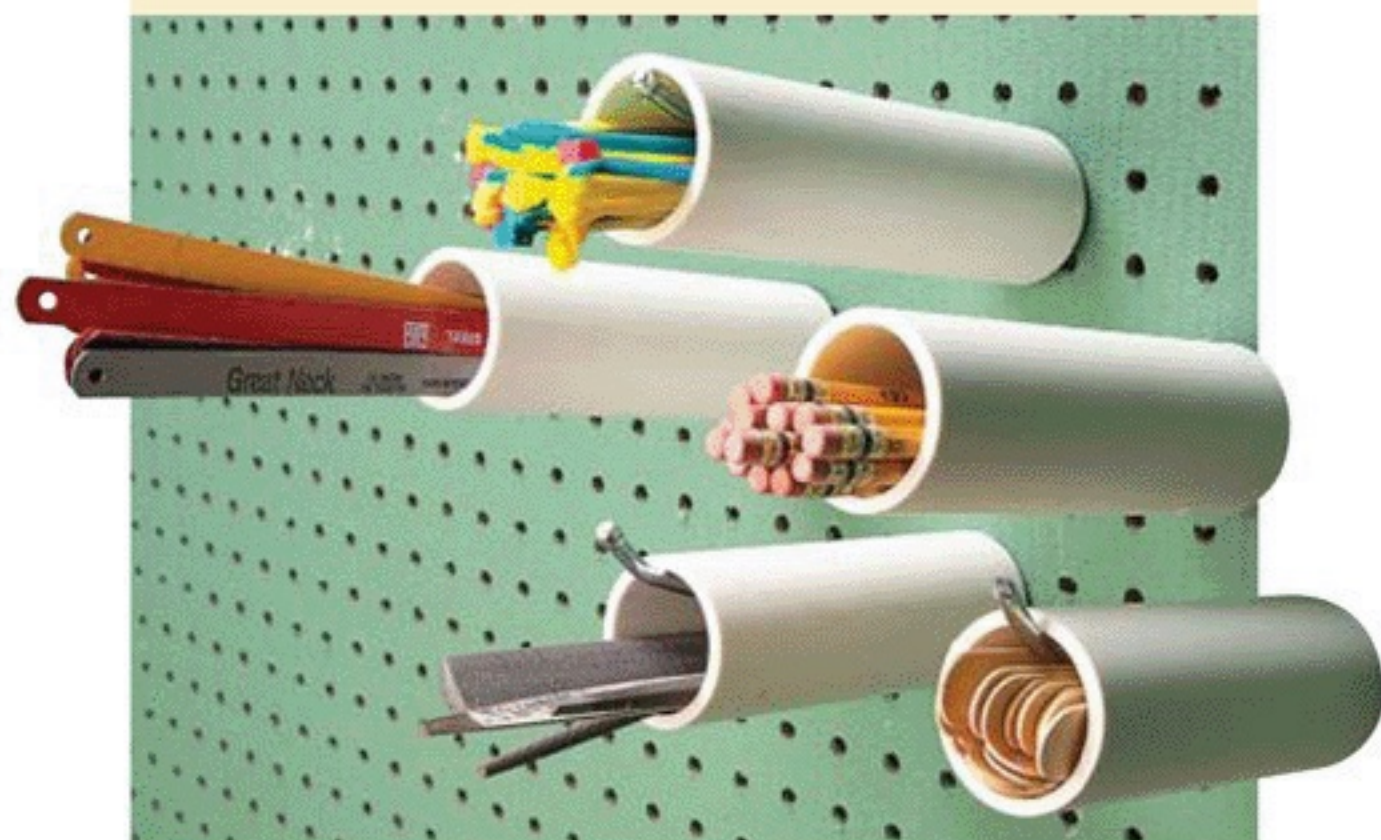


PVC tool pockets

You can holster your screwdrivers, chisels, files and other hand tools in 3-in.-long pieces of 1/2- and 3/4-in. PVC pipe. Cut away the upper open section with a hacksaw or band saw, drill a hole, screw the piece on a board, and drop in the tools. If you're using a band saw, slice off the cutaway section from a long length before cutting off the 3-in. holster.

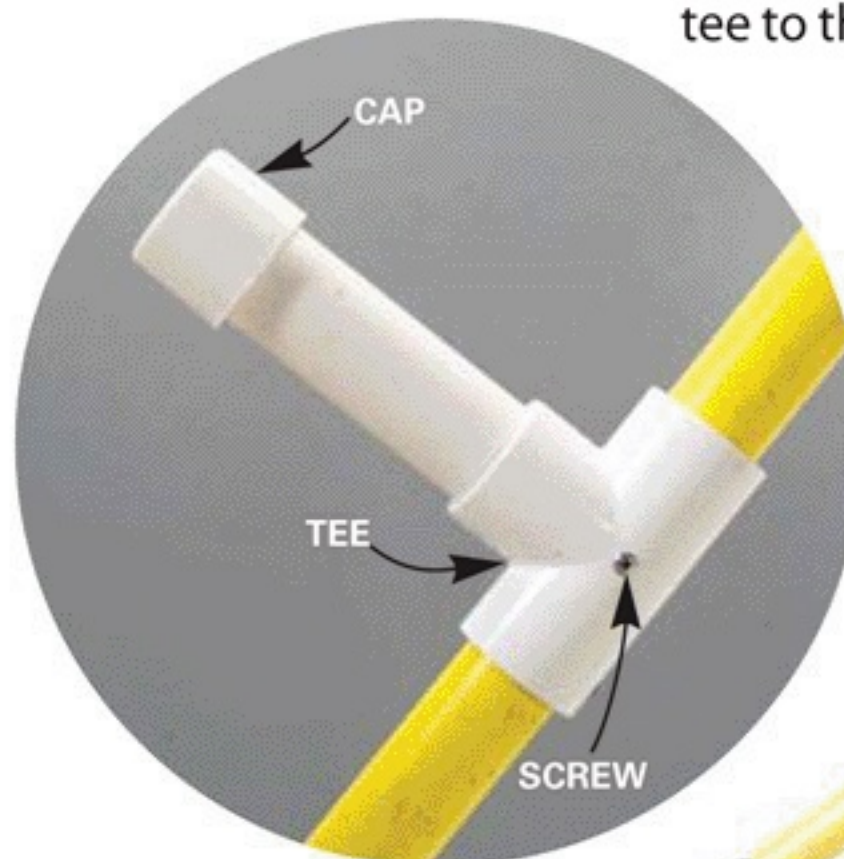
Pegboard cubbyholes

To store slender tools and shop accessories, cut short lengths of PVC pipe (1-1/2- and 2-in.-diameter pipes work well for most items) and slide them over pegboard hooks. Then load them up with files, hacksaw blades, zip ties, pencils, stir sticks ... you get the skinny.



Ergonomic rake handle

If raking makes your wrist sore, here's an upgrade that lets you rake with a straight wrist: Take a PVC plumbing tee, glue in a 5-in. section of pipe and add a cap (about \$5 altogether). A 1-1/4 in. tee fits most rake handles. Slip the tee onto the handle, find a comfortable position and screw the tee to the handle.



“Now, why didn’t I think of that?”

If you’re like most do-it-yourselfers, you can’t get enough home improvement hints and tips—those clever little nuggets that make DIY projects easier, faster, cheaper and sometimes even more fun. Some tips get filed away for use when the right situation arises, and you may use others every single day!

Inside *DIY Tips* you’ll find collections of tips on:

- Painting p. 5
- Cleaning p. 12
- Plumbing p. 24
- Lawn Care p. 28
- Appliance Repair p. 44
- Auto Repairs & Maintenance p. 53
- Sharpening p. 62
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